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ABSTRACT

The purpose of the Developmental Record Research Project was to construct an infant and child development record which could be used by paraprofessionals and those without training in test administration to monitor the developmental progress of children from birth to age 5. The project method, described in detail in this report, involved (1) selecting items of behavior which were indicative of development and coulld easily be observed and recorded, (2) establishing age norms for the behavior items, (3) developing format for an administration and scoring guide, (4) establishing reliability and validity, and (5) writing a set of administrative procedures. The third and final draft of the Developmental Record for Infants and Young Children, included in this volume, contains the following categories of behavior items: language, cognitive-adaptive, fine motor, personal-social, and gross motor. The corresponding nine behavior checklists were age normed at 0-6 months, 5-10 months, 8-16 months, 14-20 months, 18-24 months, 22-28 months, 26-36 months, 34-46 months, and 44-60 months. Detailed technical data and notes on selected items, method of selection of sample, standardization questionnaire, scoring procedures, and screening are appended. (Author/CM)

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THE DEVELOPMENTAL RECORD RESEARCH PROJECT

FINAL REPORT

presented to

THE OFFICE OF CHILD CARE

OFFICE OF CHILD CARE,
DEPARTMENT OF SOCIAL SECURITY,
CANBERRA, A.C.T.

PS010305

BY

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SALISBURY EAST, S. AUST. 5109

September 29th 1978

CONSTRUCTION OF AN INFANT
AND
PRESCHOOL DEVELOPMENTAL RECORD
FINAL REPORT.

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SALISBURY COLLEGE OF ADVANCED EDUCATION,
SALISBURY EAST, S.A. 5109.

SEPTEMBER, 1978.

ABSTRACT

The research reported here was funded by the Advisory Committee on Child Care Research, the Interim Committee of the Children's Commission, the Research Committee of Salisbury College of Advanced Education, the Lilly Endowment Group (USA) and the South Australian State Unemployment Relief Scheme and was carried out from July 1973 to September 1978.

The initial aim of the project was to construct an infant and child development record which could be used by paraprofessionals and those without training in test administration to monitor the developmental progress of children from birth to age four. This age range was later extended to include children to the age of five years. The method involved selecting items of behaviour which were indicative of development and which could be easily observed and recorded, the establishment of age ranges within which the appearance of these behaviours could be considered "normal", the development of a format, establishment of reliability and validity and the writing of a set of administration procedures.

Progress to the end of the major funding period (December 1975) was made to the point of the development of a format. Unforseen delays and problems occured in the collection of data required to establish age ranges of behaviour. Because of this delay the 1976 drafting of the Developmental Record for Infants and Young Children was considered as an experimental version only. The senior investigator was able to conduct field trials and preliminary reliability studies of the Developmental Record while on study leave at Harvard University. The format was revised and additional items included in two further experimental drafts which were completed in late 1977 and early 1978.

A State Unemployed Relief Scheme grant enabled the validity study to be completed by mid-September 1978 and this is included in the final report. Apart from the necessity to write a technical manual The Developmental Record for Infants and Young Children has reached the point where it is ready for non-profit commercial production. It is recommended that an appropriate name for the instrument is the Australian Child Development Record

DEVELOPMENTAL RECORD
FOR
INFANTS AND YOUNG CHILDREN

(EXPERIMENTAL VERSION III - DRAFT)

B. E. J. Burdon
Salisbury College of Advanced Education

DEVELOPMENTAL RECORD FOR INFANTS AND YOUI

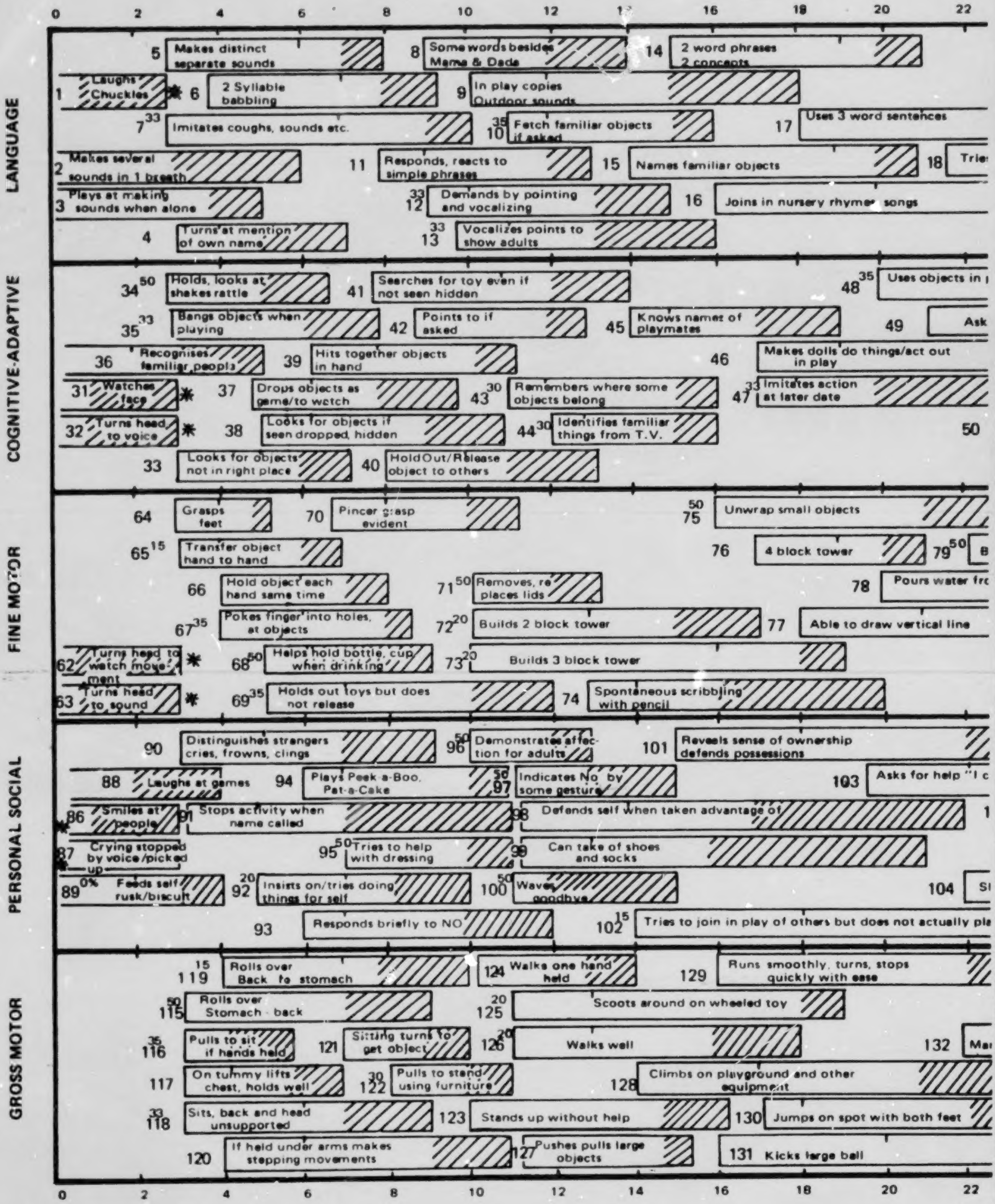
PERCENTAGE OF CHILDREN PASSING: 25 50 75 90

Item Number: 5

✱ INDICATES 100% AT 3 MONTHS

Child's Surname..

Name of Recorder.......................

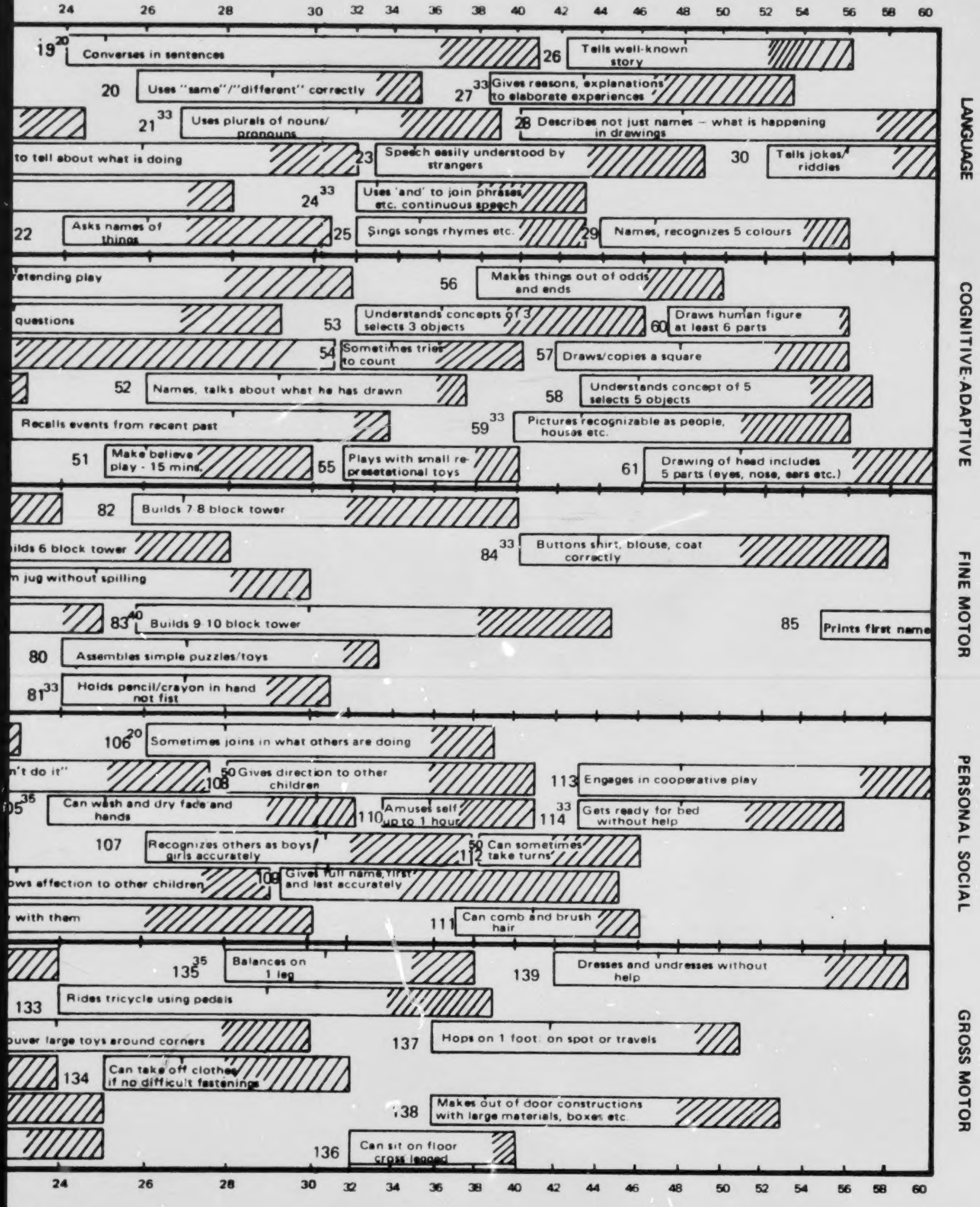


G CHILDREN (EXPERIMENTAL VERSION III – DRAFT)

Given Name...

....

	Year	Month	Day
Date of Recording	....	....	....
Date of Birth	....	....	....
Age at Recording	....	....	....



Notes

ACKNOWLEDGEMENTS

This report reflects the contributions of many people, in particular Research Assistants Jenni Gilligan (1974) and Alison Newton (1975) whose enthusiasm, knowledge, initiative, keenness and sheer hard work carried the project through the first two years. Margaret Barker and Sue Heinemann assisted with the interviewing and data collection in the norming phase while Robyn Roos and Wedny and Jo Holder conducted the psychological testing for the validation study. Erik Pukitis at SAENET and Tom Marx at Harvard University wrote computer programs to process data while Ian Milne, Don Fuller, Susan Lundy and Freida Cheok of the Commonwealth Bureau of Statistics provided invaluable advice and assistance in arranging the interview sample.

Burton White at the Harvard Graduate School of Education gave encouragement and technical advice during the senior investigators period of study leave and supported the field trials and reliability studies while staff at the Soldiers Field Day Care Centre in Boston participated in the data collection itself. Preschool teachers, day care workers and more than 700 parents in Adelaide shared their child caring and child rearing experiences with us during the first two years of the study. Particular thanks are offered to the directors, staff, parents and children of the St. Peters and St. Francis Day Care Centres, the Campbelltown Children's Centre, Sunedin School and the Strathmont Centre who gave so much in participating in the validation study in 1978.

Certain parts of the validation study could not have been carried through without the support and guidance of Margie Philp while at ACER Diane Bradshaw arranged our visits to discuss test development and to examine and review various test materials.

Very little would have been accomplished without family support and encouragement. This was both personal and professional for Judith's knowledge of and contacts with day care centres in Adelaide and in Boston made centres so available and it was her insight into children that helped answer questions and clarify thinking about the behaviour of young children in full day care. To our own children, Benjamin, Rachael and Michael many thanks for understanding what this research was all about.

Janet Plummer, Janet Hilliard, June Williams and Margie Stammers assisted with correspondence, typing and general clerical duties. Tom Glouftis prepared the first draft of the Developmental Record and the present format was drafted by Lyn Chocking. June Williams cheerfully accepted the often repetitious task of typing innumerable drafts for this final report. The study was administered through Salisbury College of Advanced Education and the support and backing of the Director of the College Mr. R.S. Coggins and the administrative assistance of Lyall Aird and George Vincent is acknowledged.

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I. The Developmental Record for Infants and Young children (Experimental Version III - Draft).

II. Draft Guide of Administration and Scoring Procedures to Accompany the Developmental Record for Infants and Young Children.

Appendices

1. Items Selected for Standardization.
2. Notes on Method of Selection of Sample For Child Development Study.
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4. Items Selected for Experimental Version 1.
5. Draft Guide of Administration and Scoring Procedures to accompany The Developmental Record for Infants and Young Children (Experimental Version 1).
6. Supplementary Items List.
7. Developmental Screening in Massachusetts: Some Impressions, Some Implications.

BACKGROUND TO THE PROJECT.

There has been an increasing emphasis in recent years on the development and implementation of co-ordinated approaches to the early detection of disease, psychological handicap and developmental delay. This emphasis on early development is based on the assumption that treatment at a stage before symptoms have appeared offers the best chance of preventing, or at least modifying the deliterious effect of the disease or the handicapping or psychologically disadvantaging condition. This effort is found not only in early intervention programs but in community medicine, education and pediatrics (Bower 1978, Frankenburg and Camp 1975, Meier 1973, Sparrow 1974, U.S. Department of Health Education and Welfare 1972).

The thurst and motivation for these has come from a variety of sources, probably the basic one is the concern to improve or to provide for individuals a quality of life which they might not have anticipated had not early detection and follow up treatment be provided. Another concern, especially with the declining birth rate in Western countries is to maximise the quality of life of the decreasing numbers of children in our society. More is being invested in each of these scarcer commodities.

There are in Australia, as elsewhere fairly significant groups in the population whose children are "at risk" in relation to health and psychological development (Winefield and Moss 1975, Murrell and Moss 1976). Many of these children are found in families living on or below the "poverty" line, those to whom some consideration is currently being directed in the form of community, welfare, day care and education programs. As well, the current expansion in day care and early childhood services means that increasing numbers of very young children will be cared for, for considerable periods of their waking day, by adults other than those who are their primary caregivers or biological parents. In this situation it is considered that some fairly regular monitoring of the developmental progress of each child is essential and should not be left to chance.

The psychological assessment of young children by strangers is difficult especially when the child's co-operation and attention are required. On the other hand those teachers, caregivers and paraprofessionals who care for the children, who are known to them, who have their confidence and who know a good deal about each individual child are usually not trained to administer and interpret psychological tests. In addition, most of those tests are expensive in both time and financial cost and are too detailed to serve a broad range of function.

An alternative approach to early detection of developmental delay is that which is now usually referred to as "developmental screening" (Meier 1973). At its most elementary level this process is designed to detect developmental lag or delay only in its broadest or coarse grained sense. If delay in development is detected or suspected as the result of this screening then more expert assessment and diagnosis is called for. At this level developmental screening does not claim to make specific diagnosis or assessment.

A broad based developmental screening record should meet a number of criteria which include high levels of reliabilities and validity, a sound theoretical basis, well established norms of behaviour, simplicity and ease of administration, recording and interpretation, and economy both of administration and cost. It was decided to develop a screening record which fulfilled these criteria and which could be used by paraprofessionals and others who would not normally be trained in the administration and interpretation of psychological tests but who would know the children being evaluated.

METHODOLOGY AND PROGRAM OF TEST DEVELOPMENT

The initial task was to ascertain whether any test, instrument or screening record already existed which met the criteria listed above or which could be modified to meet these criteria. Having established that this was not the case the following sequence of action was planned.

1. Review tests and measures of development.
2. Review relevant literature.
3. Establish a theoretical framework.
4. Establish a pool of items of age-appropriate behaviours.
5. Refine the item pool.
6. Field trial, revise and further refine the item pool.
7. Field test the items selected to this point.
8. Decide on the format.
9. Select behaviour items for norming.
10. Establish age norms for these behaviour items.
11. Select items and prepare format.
12. Prepare administration protocol and guidelines.
13. Field trial and revise format, item descriptions and protocols if necessary.
14. Conduct reliability studies.
15. Conduct validity studies.
16. Prepare an Administration Manual.
17. Revise, if necessary, prior to publication.

A research grant made available by the Australian Government through the Advisory Committee on Child Care Research enabled the Developmental Record Research Project to be initiated early in 1974. In fact the project had been developing during 1973 with the assistance of a small grant from the Salisbury College of Advanced Education Research Committee which had allowed the chief investigator to spend a week in Melbourne reviewing tests and related literature and discussing test development procedures with personnel of the Australian Council for Educational Research. The first step in the study was to examine critically all available tests and to review relevant empirical and theoretical literature.

1. REVIEW OF TESTS AND MEASURES OF DEVELOPMENT.

Over eighty developmental and preschool tests, both published and unpublished were evaluated in some detail in the early stages of the study. Other tests and measures were considered as they became known or available during the course of the study bringing the total number considered to over one hundred. This review had the dual purpose of discovering whether any existing measure fulfilled all the requirements outlined previously and as well of contributing likely age-related behaviour items to the pool from which final selection was made. In considering published materials, use was made of Buros's Mental Measurements Yearbooks and the resources of the Australian Council for Educational Research Test Library. Johnson and Bommarito (1971) have reviewed unpublished tests which were developed during the period 1956-1965 so the investigators used an identical search procedure to locate unpublished tests developed during the period since 1966. In addition relevant publications from the Educational Resources Information Centre (ERIC) and the Educational Testing Service (ETS) were searched for references to relevant tests and measures.

2. LITERATURE REVIEW.

The review of literature relating to infant and early child development focussed on primary sources published since 1969 as it was considered that much of the earlier theorizing and research was available in secondary sources such as Ausubel and Sullivan (1970), Mussen (1970), Mussen, Conger and Kagan (1974), the Annual Reviews of Psychology and similar publications. These were checked carefully for possible leads in the areas of developmental theories, behavioural correlates of development and instrument and item development. Theoretical views were also studied so that they might help provide a theoretical framework for the instrument and ideas for the development of behavioural items for the item pool. These views include especially the work of Piaget (1950, 1951, 1952, 1953, 1955, 1967, 1969) and Kagan (1974) for cognitive and social development and Gessell (1949) for motor development.

3. THEORETICAL FRAMEWORK.

A comprehensive conceptual framework encompassing all areas of human development has yet to be elaborated. A Piagetian focus was agreed on as offering the most useful conceptual perspective, not only for developing cognitive abilities but also for aspects of the child's social and even emotional development. Motor development lies outside this conceptual framework but the course of fine and gross motor development have been well documented by Gessell (1949) and this was used as a guideline in the study. A number of investigators (Kagan 1974, Lewis and Rosenblum 1974, 1975) have more recently attempted to link aspects of affect display with unfolding cognitive capacities such as object permanence, memory, expectancy function and the activation of hypotheses and these support the decision to adopt a cognitive based theoretical perspective.

4. ESTABLISHMENT OF A POOL OF AGE-RELATED ITEMS DESCRIBING BEHAVIOUR.

An extensive pool of items describing age related behaviours was built up from a consideration of existing tests and measures, from the theoretical and research literature reviewed and in some cases by devising statements of behaviour from a consideration of theoretical writings and research studies.

In every case an attempt was made to chart these descriptors or behavioural items to show an age range during which the particular behaviour was typically observed or could be expected to occur in most competently functioning young children. Over 1000 of these items of age appropriate behaviours were charted at one month age intervals for the 1 to 48 months (later extended to 60 months) age range. From these a summary chart of more appropriate items was prepared. At this time it was decided to lift the "lower" end of the scale to 3 months. It was considered that the neonate usually receives some pediatric assessment and close support from infant welfare agencies and that if there was cause for concern then the recently published Brazelton Neonatal Behavioural Assessment Scale (1973) would be appropriate at least for neurological assessment in the first 30 days of life. It was also realized that assessment of neonates by casual observation is very difficult and further that there would be little likelihood that many 2 month old infants would be left in extended day care settings.

5. REFINEMENT OF ITEM POOL.

When completed this summary chart comprised items of age appropriate behaviours charted at one month age intervals for the 3 to 60 month age range and selected on the basis of

(i) the observability of the behaviour in normal or natural environmental settings. This means that it would not be necessary for the observer to have to deliberately set about to elicit the behaviour.

(ii) consensus for inclusion i.e. the item had some apparent face validity in being included in at least two other measures or tests. As well some especially developed items were also included.

(iii) "fit" within the theoretical framework,

(iv) conceptualization, i.e. the item was indicative of some aspect of psychological or physiological development or the dynamics of these developments.

This reduced the number of items available for field testing to just under 500.

6. FIELD TRIALS AND REVISION OF ITEM POOL.

The initial field trial was conducted in two phases, the first was a fairly informal process and in fact had paralleled much of the latter part of the item development phase. The research assistant and the chief investigator (though less frequently) spent a good deal of time at two day care centres observing children and discussing many of the behavioural items with staff. These discussions included the prevalence of a range of the behaviours in children, the ease of observability of these behaviours, the utility of certain items the clarity of statement of items, and the design and layout of proposed formats. As a result of these direct observations and first hand experiences with children and their caregivers the statement and description of a number of item were modified.

7. FIELD TESTING OF ITEMS.

The next phase of the study involved the evaluation of the nearly five hundred items which remained from the original list of one thousand. It was decided to collect information on the ability of the items to describe satisfactory development by looking for these behaviours among children in day care centres and preschools and through discussing with parents the behaviour and development of their children. This was done to ensure that information would be available in equal proportions on all the items which spanned the age range 3 to 60 months. The concern at this stage was to find out from parents and caregivers, i.e. those who would presumably have a good knowledge of particular children, information about

(i) which behaviours the child displayed at its present age,

(ii) when particular behaviours were first apparent (or ceased to be displayed in some appropriate cases),

(iii) whether the behaviours were readily observable,

(iv) the ease or difficulty of understanding the statement or expression of a particular behavioural item,

(v) any other relevant comments or suggestions.

Visits were made to a number of day care centres and preschools and discussions with parents were arranged through the co-operation of a number of Mothers and Babies Health Association infant welfare clinics. These latter interviews and discussions were arranged either by telephone or by direct visit to the home. At each visit the appropriate information and comments were recorded alongside the statement of the particular behavioural items. Information was collected for 220 children distributed fairly evenly through the age range of 3 to 60 months. This sample cannot be considered as being either representative or random but at this stage no norming of items was being attempted. On the basis of this information summary statements concerning the appropriateness, utility, clarity and representativeness of each item were prepared to guide the selection of items for the norming study.

At this stage in the report the numeration is interrupted to outline the progress made to the end of December, 1974.

PROGRESS TO DECEMBER 1974.

The work detailed to this point took the project to the close of 1974 at which time Jenni Gilligan, who had been a most able and enthusiastic assistant, resigned because of the current uncertainty about the continuation of funding for 1975. This uncertainty about funding was not resolved until mid-December 1974 when the renewal grant was announced. Some problems of continuity were encountered in spite of the extensive notes and records which had been prepared and this led to some slowing down in the program while the new assistant, Alison Newton, acquainted herself with the details of the project and the progress which had been made prior to her appointment.

The timetable which had been drawn up prior to the commencement of the study had envisaged the project further along in development by the end of 1974 than was in fact achieved. This slower progress can be attributed to a number of factors including

(i) initial unfamiliarity of the investigators with items and behaviours,

(ii) the concern to observe behaviour occurring "naturally" rather than as a result of some deliberate stimulus or elicitation,

(iii) the large number of items with which the study was concerned initially meant that a good deal of time was taken up in discussing with day care and preschool personnel the appropriateness of items, the accuracy of the observations the investigators had made of specific children and in recording comments and impressions about items, format and the like made during the field work to assist later discussion.

While all of this was a fairly time consuming process it proved invaluable in helping to clarify thinking about the project and its direction, it led to a number of developments and modifications and also assisted later in the selection of items for the experimental version.

MODIFICATIONS

Experience in the first year of the study led to the modification of some earlier ideas about the nature of the proposed developmental record. These modifications relate to the age ranges of the behaviours included in the record and to the nature of some of the items selected.

(i) Age range of items. It had been intended originally to construct the record to show the behaviour which occurred most frequently at each of the one month age intervals through the range of the ages considered in the record. It became apparent very early in the project that this would give a very unnatural picture of development because many developments are not specifically age related in their manifestation and because developments occur and become manifest within and across a range of ages. As well, the inclusion of items at each month of age would have made the record excessively long and unwieldy and added little to the accuracy of its screening purpose. The resolution of this problem was achieved by the adoption of the particular format discussed below.

(ii) The nature of the items selected. One planned objective of the project was to produce an observation-based record and not one that required a face-to-face "test type" situation. The preliminary selection of items was based on this objective. It soon became apparent however that certain behaviours occur only in response to a specific situation and therefore that some structure is required if these are to be seen. Keeping in mind that the record is designed for use by those who are in close and regular contact with the children being observed, it was considered that some behaviours could be elicited "naturally" in the course of that persons day to day involvement and interaction with the child. As an example it was found that a non-participant observer took considerable time to record the range of language responses of an 18 month old child. However those working directly with the child were able to record this range quickly and without stress to the child on the basis of their knowledge gained through daily interaction with the child and their elicitation of responses in a natural, non-threatening way during this contact.

While still not envisaging a formal "testing" situation, item development was extended to include behaviours that could be observed through relatively informal interaction with the child together with behaviours that could be described accurately by others who know the child well.

8. FORMAT.

In keeping with the stated criteria of "simplicity, and ease of administration, recording and itnerpretation" and the intention of providing some kind of profile of development in a number of areas or domains the objective had always been to devise a format of one, or at the most, two pages. A detailed review of existing measures reinforced this intention and the good sense of devising a format which listed age appropriate behaviours on the one sheet. This would enable behaviours to be checked off and an immediate summary or profile obtained, thus eliminating the two step process required in nearly all of the measures reviewed. Despite numerous attempts no significant improvement could be made over the format of the Denver Developmental Screening Test (DDST), (Frankenburg, Dodds and Fandel 1973).

In this test 105 behaviour items are shown in developmental format ranging from the age when 25% of children achieve or display the behaviour to the age when 90% of children show mastery. These behaviours are arranged in four "domains" or categories (Personal-Social, Fine Motor-Adaptive, Language, Gross Motor) and in all span the age range from birth to 6 years. An age line is drawn through the four domains and so intersects a number of behavioural statements. These items adjacent to or intersected by the age line are then checked against the actual performance or behaviour of the individual. This format meets the requirements listed above and has a number of advantages; behaviours are checked directly on to the profile sheet so eliminating a two step process, a profile is readily available and the area of developmental lag is highlighted immediately. Not only is the area of the delay identified but some indication of the extent of such delay may also be obtained.

The decision to adopt this format had certain immediate influences on the subsequent course of the project because such a format limited the number of items that could be included. This factor and the spread of the record over a five year age range demanded that each of the items selected for inclusion be a valid indicator or descriptor of some significant aspect of development or of some developmental process. It was decided to vary the DDST format by separating behaviour items into five (rather than four) categories to give more stress to cognitive development than was apparent in that test. The investigators considered that this had been underplayed by Frankenburg and his colleagues. The five domains decided on were labelled Language, Cognitive-Adaptive, Fine Motor, Personal-Social and Gross Motor.

9. SELECTION OF ITEMS FOR NORMING.

The selection of items for norming was influenced by a number of factors including the data collected on each of the nearly five hundred items from the field study, the particular format which had been adopted, the underlying theoretical basis, and the requirement that items be assessed by observation and not by testing. At this stage problems associated with obtaining a norming sample became apparent (this will be discussed separately below) and further influenced the selection or exclusion of a number of items. The 271 items selected for norming are listed in Appendix 1. Every attempt was made to include an adequate number of items through the age ranges for each domain (i.e. horizontally) and at the same time ensure that each age was adequately covered in each of the five domains (i.e. vertically). This was done by drawing up large charts to simulate the eventual format and pencilling in items (with, at that stage, hypothetical ranges of frequency) to ensure adequate cover.

10. ESTABLISHING AGE NORMS FOR THE BEHAVIOUR ITEMS.

In order to establish viable and useable age ranges for each item (i.e. the proportion of the population displaying that behaviour at a particular age) it was necessary to obtain data from as representative a sample of the population as possible. This could not be obtained by sampling infant health service, day care centre and kindergarten populations as had been done in the early stages of the study and a more systematic approach was required.

(i) The Sample.

Assistance was requested from the Commonwealth Bureau of Statistics who suggested that given the resources available and the nature of the task the best approach would be to obtain data on all children living in a range of carefully selected population blocks in Metropolitan Adelaide. Using their own information and data prepared by Cleland and Stimson (1975) the Bureau selected population blocks and suburbs which would give a spread (but not necessarily a representative sample) of the population through a wide range of geographic areas and with respect to socio-economic status. The selection was deliberately non-representative in some respects. It was decided to select areas where it would be likely there would be a higher proportion of children in the desired age range and as well the decision was made to avoid high ethnic population areas to reduce time wastage because of the limited language facility of the project team. The Bureau were anxious that the project avoid areas already being studied either by themselves or other groups to whom they had given similar advice.

It should be stressed that the sample cannot be regarded as truly representative not only because of the factors already listed but also because the same number of dwellings was selected from each suburb and each socio-economic status group. In order to obtain a truly representative sample the number selected in each area would have to be proportional to the population of the area and of the population of each socio-economic group. This however was not feasible given the requirement to collect data by interview on 600 subjects and in view of the financial resources available. Because of this only "high fertility" areas were selected which was an additional factor contributing to the lowered representativeness of the sample. The notes prepared by the Commonwealth Bureau of Statistics and the selected population blocks are included as Appendix 2.

Data was collected on 625 subjects however 34 of these were rejected because of some severe developmental problem, extended periods of hospitalization or sickness, prematurity or incomplete data. This meant that data was available for 591 children distributed through the age range 3 to 60 months and across a number of suburbs which ranged through the rankings for socio-economic status. This distribution across SES is presented in Table 1 and highlights the data collection technique whereby the sets of the five SES

TABLE 1.

NORMING SAMPLE DISTRIBUTED BY SES AREA

SES AREA*	n	%
1	127	21.5
2	112	19.0
3	112	19.0
4	99	16.8
5	113	19.1
Not Known	28	4.6
TOTAL	591	100.0

*Suburbs sampled in SES areas:
Area 1. Eden Hills, Hawthorndene, Novar Gardens.
Area 2. Athelstone, Banksia Park, Fairview Park, Happy Valley.
Area 3. Salisbury Plain, Modbury, Fulham Gardens.
Area 4. Valley View, Elizabeth Vale, Christies Beach.
Area 5. Taperoo, Ingle Farm, Elizabeth West.

suburbs were sampled to achieve approximately equal representation.

Further descriptions of the sample are contained in Table 2 (parental occupation) and Tables 4 and 5 (country of origin of parents and language used in the home). These figures enable some comparison to be made with the 1971 Adelaide census data.

TABLE 2.

NORMING SAMPLE DISTRIBUTED BY PARENTAL OCCUPATION

OCCUPATION RANKING*	n	%
1. Professional and Senior Business.	29	4.8
2. Professional/Senior Managerial.	24	4.1
3. Sub-professional/Managerial/Accountant.	64	10.8
4. Teacher/Small business/Office/Bank.	157	26.7
5. Clerical/Sales/Service/Skilled Trade.	181	30.5
6. Shop assistant/Semi-skilled/Transport.	86	14.6
7. Unskilled.	20	3.4
Not Known.	30	5.1
TOTAL	591	100.0

*Occupation ranking based on Congalton (1969).

For comparison 1971 census data for the Adelaide metropolitan area is presented (Cleland and Stimson, 1975, p.23). Although the classifications (see Table 3) are not the same as used in this study they give some idea of the broad distribution by occupation in the labour force at that time. It should be noted that this distribution can not imply a ranking as in Table 2 above.

TABLE 3.

OCCUPATION CLASSIFICATION FOR ADELAIDE STATISTICAL DIVISION 1971.

OCCUPATION	% of Labour Force.
Professional	11.4
Administrative	6.8
Clerical	16.6
Sales Workers	8.8
Farmers, Miners	1.9
Transport Workers	4.8
Craftsmen etc.	35.0
Service Workers etc.	8.3
Armed Services	.8
Others/Not Stated/Unemployed	5.1
TOTAL	99.5

An impression, and it is no more than that, is that the norming sample is "middle-heavy" and slightly under-represented at either extreme i.e. in rankings 1, 2 and 7.

Some idea of the ethnic composition of the sample may be obtained from Table 4 which shows country of birth for both parents of each child in the sample and for the Adelaide Statistical Division for 1971.

TABLE 4.

PARENTAL BIRTHPLACE

COUNTRY OF BIRTH	NORMING SAMPLE				1971 CENSUS DATA
	MOTHER		FATHER		ADELAIDE
	n	%	n	%	%
1. Australia	417	70.6	401	67.9	71.9
2. Britain & Ireland	116	19.6	110	18.6	14.8
3. Germany	13	2.2	21	3.6	1.4
4. Poland/Russia	6	1.0	3	0.5	1.0
5. Greece	3	0.5	4	0.7	1.4
6. Italy	2	0.3	6	1.0	3.4
7. Yugoslavia	2	0.3	1	0.2	0.4
8. Spain/Malta/Cyprus	1	0.2	1	0.2	0.1
9. Other/Not Known	31	5.2	44	7.4	5.6
TOTALS	591	100.0	591	100.0	100.0

This 1975 sample contains slightly more parents born in the United Kingdom in comparison with the 1971 census figures but is not truly representative of Greek and Italian born parents. This is an artifact of the sample selection procedure and reflects the deliberate policy of avoiding problems associated with language difference. The project did not have the resources available to interview and translate in a variety of non-English languages even if it was thought necessary to do so.

Because the study was dealing with developmental universals rather than child rearing practices the investigators considered that it was not really necessary to sample the various language groups. The application of the Developmental Record for use in non-English language situations could be a later development but it was considered to be of lesser priority in these initial stages. In compiling the suburbs and blocks for this study the

Bureau of Statistics deliberately avoided areas with a high incidence of non-English migrant residents. Had this not been done a good deal of time and resources might have been expended for a very small return of useable data.

It was found (see Table 5) that a high proportion of those parents who had not been born in Australia or the United Kingdom used English in the home as their usual language.

TABLE 5.

USUAL LANGUAGE USED IF NOT U.K./EIRE OR AUSTRALIAN BORN

LANGUAGE USED	n	%
English	61	84.6
Greek	4	5.6
Yugoslavian	4	5.6
Italian	1	1.4
German	1	1.4
Other	1	1.4
TOTAL	72	100.0

Notes: 1. 471 families (79.7%) indicated that the question did not apply.

2. No data is available for 48 families (8%).

Some discrepancy is apparent when comparisons are made between data presented in this table and that found in Table 4. As an example 4 families indicate Yugoslavian as the usual language used although only 3 parents were born in Yugoslavia. A total of 72 families indicated that one partner was born in a non-English speaking nation whereas the combined figures from Table 4 are 63. The discrepancies may be explained in the "Other/ Not Known" categories which are fairly high (5.2%, 9.4%, 8.1%). If this data were available the country of origin data would also be more accurate and enable better judgement to be made of the ethnic composition of the norming sample. In spite of this however the investigators abide by their preselection of low migrant areas to avoid language problems and maximise resources in the interest of more extensive data collection.

(ii) Data Collection Procedures

Our experience during 1974 had shown that observers who do not know a child particularly well may take a considerable amount of time to collect specific data by direct observation alone. If this was done it was apparent that the investigators would have to spend a considerable amount of time in the homes of each of the 600 subjects to collect the data by observation. It was decided therefore to collect the required data by interviewing the parent(s) of each child in the sample. A structured interview/questionnaire was developed for this purpose and scoring protocol devised. A number of trial interviews were conducted and some minor modifications were made before the Standardized Questionnaire was developed (see Appendix 3). The questions and probes were devised in an attempt to avoid leading the responder to a "desired" or "acceptable" answer. Two interviewers (both with previous interviewing experience) were employed for this phase of the project and they along with the Research Assistant Alison Newton, and the Chief Investigator spent 4 days training in the use of the questionnaire. This training included a detailed study of each item, instruction in the use of the Questionnaire, the conducting of a number of simulated and trial interviews and follow up discussion to standardize administration and scoring procedures. Ms. Newton had, prior to this training phase, spent a day at the Bureau of Statistics receiving instruction in interviewing and was able to use this knowledge during the training sessions.

Throughout the interview/data collection period, the interview team met regularly to check their administration, scoring and coding procedures and to tally successful contacts and interviews in the population blocks. Each interview form was rechecked by the Research Assistant for correct coding and completion. Ms. Newton also wrote detailed comments about each item in relation to its apparent viability, discriminative ability and utility as an "observation based" test item. When the interviewing was completed the team met for a two day debriefing and each interviewer wrote extensive notes on the items. This coincided with the end of the funding period (December 1975) so work on the project during 1976 and 1977 was conducted by the investigators without research assistant assistance. It should be acknowledged here that the employment of one of the interviewers during 1975 was made possible by a further grant from Salisbury College of Advanced Education in that year.

(iii) Data Processing

When all interview questionnaires had been rechecked the data was punched on to computer cards at the SAENET computer processing centre at The Levels campus of the South Australian Institute of Technology. A programme to analyse the data was written by Mr. Erik Pukitis of SAENET. This programme arranged the data for each item by age progression and number and cumulative percentage of response type. The data display made it possible to identify behaviour items which showed a developmental sequence in their onset and appearance. This allowed for the establishment of acceptable age-ranges within and across which the onset and development of particular behaviours could be considered quite "normal".

II. ITEM SELECTION.

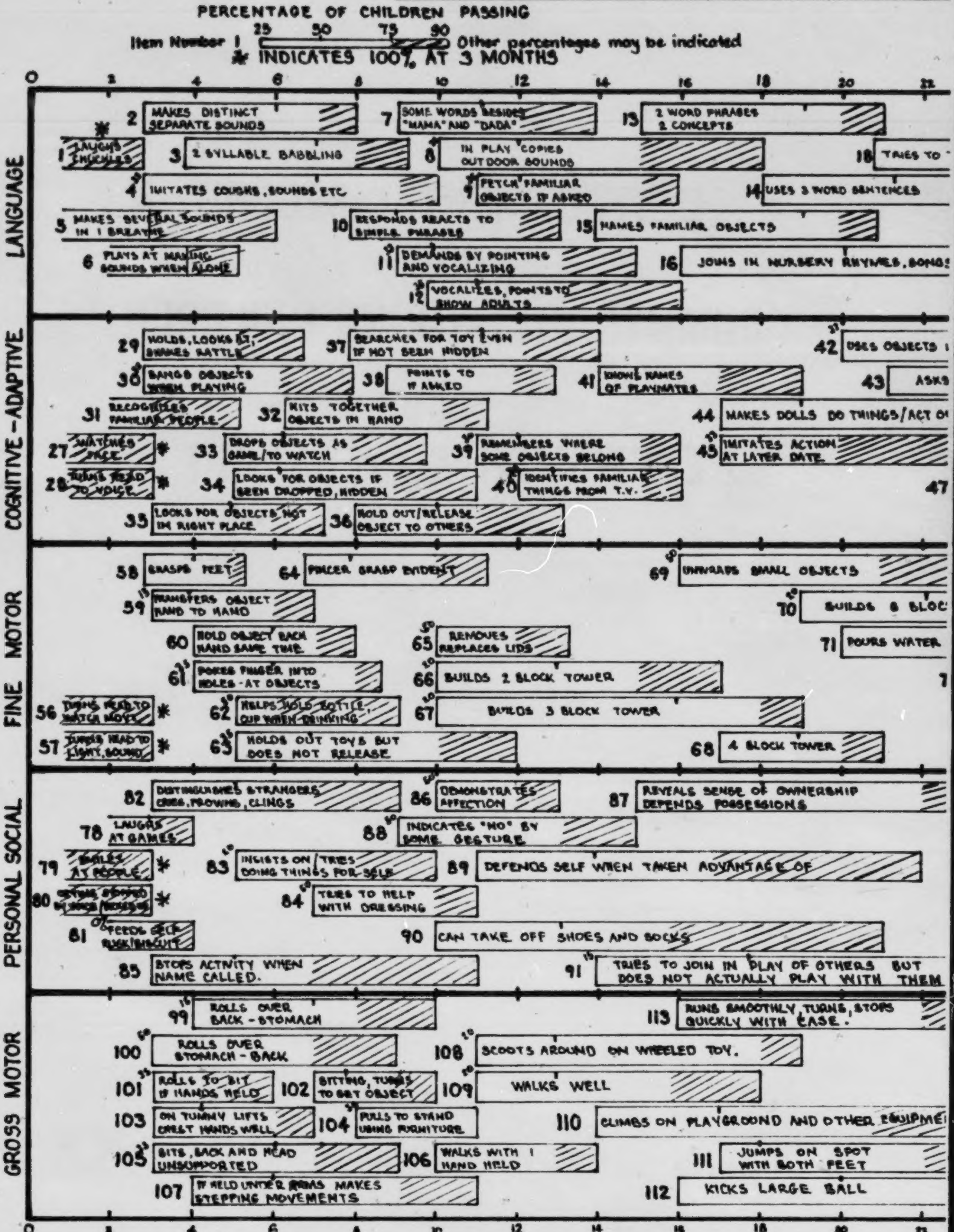
A total of 116 items which displayed some developmental progression and which could be included in the format design were selected from the original 271 items for which data were collected. These 116 items (included as Appendix 4) were transferred to a large single page recording format which was named The Developmental Record for Infants and Young Children (Experimental Version 1) and is presented here. It can be seen that some items are "shorter" than others but all indicate the progression through time (or age) from the point when very few children display that behaviour to the age when most (90%)

DEVELOPMENTAL RECORD
FOR
INFANTS AND YOUNG CHILDREN

(EXPERIMENTAL VERSION I)

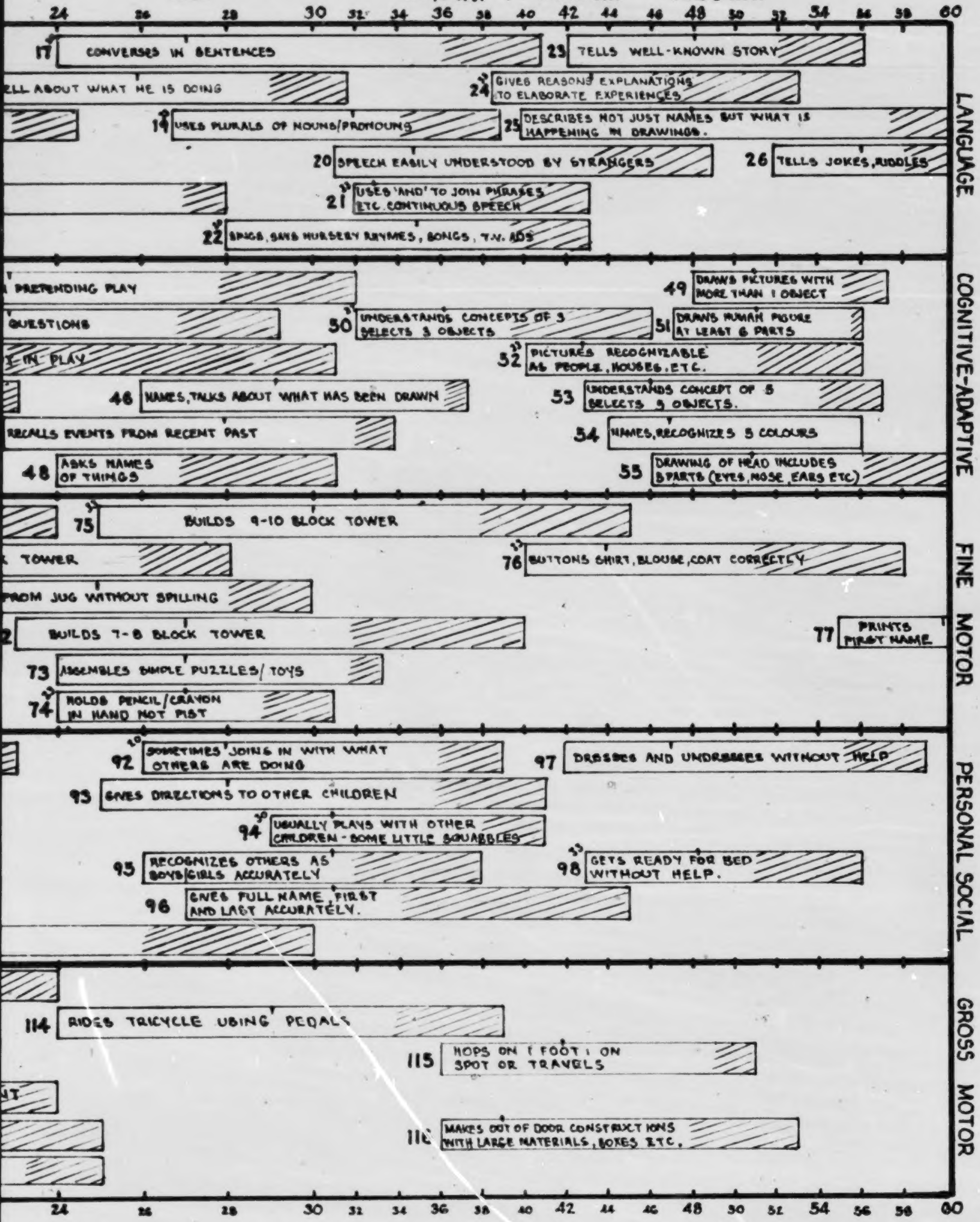
B. E. J. Burdon
Salisbury College of Advanced Education

DEVELOPMENTAL RECORD FOR INFANTS AND



YOUNG CHILDREN (EXPERIMENTAL VERSION)

NAME OF CHILD: Surname.............................. First..........................
DATE OF READING. Day .... Month .... Year ....
DATE OF BIRTH Day .... Month .... Year ....
AGE Days .... Months .... Years .....



children are able to do so. Most items start at the time when about 25% of children display that behaviour and show regular progression through 50%, and 75% to the time (age) when 90% of children are able to perform or have developed that skill. Some items start at 20%, others at 30% or 33% and a few start at 50%, this reflects the data that was collected.

12. PREPARATION OF ADMINISTRATION AND SCORING GUIDE.

The draft of an administration and scoring guide which also contained a description of each of the 116 items was prepared during mid 1976 for later field trialling; see Appendix 5. Draft Guide of Administration and Scoring Procedures to Accompany the Developmental Record for Infants and Young Children (Experimental Version 1). It was intended that this "Guide" would be extensively trialled and evaluated and so provide the basis for the technical manual to be produced toward the end of the project.

At this time (August 1976) the principal investigator left Australia for a period of study in the U.S.A. where further development and refinement of the Developmental Record was undertaken. Sequentially these comprised reliability studies, a reanalysis of the raw data, the selection of further items for inclusion in the Record and further redraftings of the format of the Developmental Record to its present arrangement as The Developmental Record for Infants and Young Children (Experimental Version III - Draft).

The sequence which had been planned in the construction of the Developmental Record was interrupted at this time. The reliability studies which had been planned to follow after further field trialling (see above p.3) in fact became the first field trial. It is for this reason that from this point on the numeration sequence does not follow that which is presented on page 3.

13. RELIABILITY STUDIES

INTRODUCTION

The establishment of a high degree of test-retest reliability indicates basically that an instrument is consistent in its measurement. In this instance high test-retest reliability, particularly at the micro-level of individual items would indicate that a rating of a particular behavior can be made without any ambivalence on the part of the observer, that the behavior item is thus clearly described in the guide and can be isolated and recorded without difficulty. High test-retest reliability would also indicate that some sources of random error had been eliminated e.g. misinterpretation of description of a behavior or ambivalence in the isolation or interpretation of that behavior in the natural setting. It should be noted however that high test-retest reliability for particular behaviors can only be anticipated for short-term time spans. This instrument is concerned with dynamic processes so specific behaviors are sampled only at particular points in time. Another consideration is that certain behaviors are fairly age specific, they develop and peak within a certain age range and then disappear completely e.g. "Demands by pointing and vocalizing", "Walks with one hand held", "Two word phrases", or are replaced by higher level capabilities. It is for this reason that the tolerable time gap between test and retest can not exceed one week.

Test-retest reliability could be examined at three levels of specificity. At the least specific level is consistency of overall ratings, the next level is consistency across each of the five sub-sections (or "domains") and the most specific is consistency across individual items. Frankenburg et. al. (1971) report in their reliability study that most of the item disagreement arose from subjects failing at the time of first test and passing on the retest and account for this either in terms of developmental maturation or of practice effect which could occur because the Denver Developmental Screening Test involves a face-to-face testing situation.

The tendency towards improved performance with repeated testing should not be considered deliterious since the instrument is attempting to screen for delay. This might create a problem by over-selecting as developmentally delayed some subjects who are "normal", however the investigators would rather err in this direction than in the direction of under selection for the Developmental Record is at best an initial screening device and not a refined diagnostic instrument. Comments directed toward the question of test-retest reliability apply equally to the problem of inter-rater reliability. The establishment of a high level of inter rater reliability indicates that the instrument can be used with confidence by those for whom it has been designed and in the ways recommended. These reliability studies report on the consistency of overall ratings; a more "fine-grained" analysis will be conducted at a later date.

DATA COLLECTION

Data was collected by having the Developmental Record used in field settings according to the following plan and sequence. Staff and teachers completed copies of the Record on children attending a Day Care Centre located in a married student housing complex at Harvard University. The sequence was as follows:

1. Investigator to contact the centre.
2. Visit centre to brief staff, conduct familiarization and training on administration of the "Developmental Record".
3. Staff complete Record (including demographic data).
4. Retesting where appropriate (see details below).
5. Collect data from centre.
6. Revisit centre for debriefing when project completed.

The detailed model for data collection was as follows. In each self contained section (room, unit) in the centre, children were assigned to one of the two groups. When records were completed for each child in a group, staff then changed groups and a Record was completed for each child by the different rater. This is represented diagrammatically.

	Time 1.	Time 2.
Rater A.	Group 1	Group 2
Rater B.	Group 2	Group 1

It was considered best not to have the same rater do the retest recording because of the possible proactive influence of the first recording on the second caused by the brief time lapse between test and retest. This brief time lapse was necessary because the instrument is sampling dynamic processes rather than more static abilities or states, and if the retest was not done promptly then the processes being recorded may not be present as they were for the initial recording. It was expected that this data collection design would reduce the possible effects of experimenter influence for the following reasons. By using a number of data collectors each recorder contributes only a few responses to the total pool, so reducing random error (by possibly "evening out" many small amounts of random error) and experimenter bias (by not allowing the experimenter to develop certain "behavior eliciting sets", although the latter should not be a problem in this present situation where experimenters are observing behavior and not interacting with the subjects). While this design might ensure the reduction of some experimenter influence other biases may remain. Certain "observer bias" may exist because each recorder will have been working with the children whose behavior she is observing and this coupled with the fact that some children are more likeable and attractive than others could influence some positive or even negative feelings about individual children. There could be then some possible "halo" or "horns" effect influencing the accurate observation and recording of behavior.

As well, recorders may have wished to please the investigator and this too might influence the accuracy of the recording. Another possible source of error or bias was that the investigator had no control over staff who informally compare notes between recordings.

The data collection process by staff in the Centre was duplicated by the investigator and a research assistant who also collected a full set of data. This meant that two sets of data were available, one for the inter-rater reliability and one for the test-retest study. Many potential problems arise when an investigator is involved in collecting his own data in this way. The problems of acquiescing, of developing a positive response set and making lenient judgements are acknowledged. Every attempt was made to be as stringent and parsimonious in judgement as possible.

POSSIBLE CONTROL FOR BIAS AND OTHER INFLUENCE

In the briefing sessions all recorders were asked to be stringent rather than favourable in their observations (it was stressed that an unjustifiably favourable recording might obscure a real problem which the Record might otherwise discover). Recorders were also instructed not to compare their observations on different children because of the deliterious effect on the research exercise. It is recognised however that perfect control is never possible, and that some error might be present. The suggestion that raters be stringent rather than favourable in their judgement may in fact create a set for raters to be over stringent. While this would not reduce error (it may even create some) it is (from the investigator's point of view) in the "right" direction of being over cautious about possible delay rather than in the direction of acquiescing to a "give him the benefit of the doubt" response set.

SUBJECTS

The subjects on which this report is based attended a Day Care Centre at Harvard University. It was not possible to obtain background or other demographic data because of the Centre's policy of confidentiality. The Centre serves principally the children of Harvard University graduate students and to this extent some assumptions about parental education level and potential (or actual) occupation and income may be assumed. All children who attended and who could be were assessed on the "Developmental Record". The sample should not be considered at all random but was very selective in relation to the total population. The general impression gained was that many of the children were well advanced in both language and cognitive development and in social adjustment. This may have made the recording easier because many children performed on a number of items in advance of their age expectation. It could be that a random sample would include children whose performance was more difficult to judge in relation to their age norms. Another problem related to this sample were the number of children at the Centre who did not have English as their first language. In some cases a true judgement could not be made and these children had to be excluded from the study. In some other cases judgement "by report" was possible. This experience highlights the perennial problem of the verbal basis of many psychometric instruments and the confounding of delays in development or some other psychological ability by an inability to communicate in the language of the predominant culture.

Table 6 shows the age distribution of the children who were the subjects in these studies. All children who were rated for the inter-rater study were also rated, quite independently, for the test-retest study but it was not possible for the investigator or the research assistant to rate as many children as did the centre staff. The children are not spread evenly through the age range, rather the distribution reflects a particular captive subject pool.

TABLE 6

TEST-RETEST AND INTER-RATER
RELIABILITY STUDIES
AGE DISTRIBUTION OF SUBJECTS

AGE (MONTHS)	TEST-RETEST	INTER-RATER
48-69	11	11
36-47	8	8
24-35	21	10
12-23	12	8
3-11	9	5
TOTAL	61	42
RATERS (n)	6	2

INSTRUMENTATION, ADMINISTRATION AND SCORING PROCEDURES

These are outlined in detail in the Draft Guide of Administration and Scoring Procedures to accompany the Developmental Record for Infants and Young Children (Experimental Version I) which is included as Appendix 5.

DESIGN AND STATISTICAL PROCEDURES

1. Discussion

Stability coefficient and inter-rater reliability are usually established by calculating the correlation coefficient between appropriate sets of scores. This requires that the data are susceptible to parametric statistical manipulation i.e. that the data are from interval or ratio scales. Results obtained from rating children on the Developmental Record are at first appearance only ordinal in nature because the outcome of checking items of behavior within five subsets of the Record gives only an overall rating of Normal, Questionable, or Delayed. This problem of the ordinality of data could be overcome however by assigning a numerical value to each of these categories so that Normal = 2, Questionable = 1 and Delayed = 0. Ratings may be thus considered as interval data and so allow a correlation coefficient to be calculated.

While this procedure may overcome one problem it leaves unanswered that which is related to the number of raters involved in obtaining the data. If results are combined from all raters i.e. from person A, person B, person C and so, any overall correlation coefficient might disguise possible variations in the ratings of any pair of observers.

Two solutions to this problem are suggested as follows.

(i) There is no problem, combining results obtained by different observers is an acceptable procedure.

(ii) There is no problem at least for the test-retest reliability study. It can be argued that the concern here is the results obtained and not who collected the data, as it is the results which are being compared, not the ability of the rater to obtain the results. There was less certainty about the inter-rater reliability study for the emphasis here was on individual raters. If the raw data could be transformed to an interval scale and the data from different raters could be grouped, then the Pearson Product Moment correlation coefficient could be used. Because of the small values obtained and the small range involved it would probably be easier to work from raw data than from Z scores.

If the ratings could not be considered as being part of an interval scale then non parametric analysis would have to be considered. A number of non-parametric procedures were considered and rejected. Any of the non-parametric measures of correlation which require ranking (Spearman, Kendall) were inappropriate because ranking a number of subjects whose "scores" range from 0 to 2 (with most being predicted as scoring 2) is not feasible. It may have been possible to use the Chi-square test in a limited way to determine the significance of difference between ratings and predict that any difference would not be significant, however some cell values would be 0 and this violates one of the assumptions on which Chi-square is based. The Contingency Coefficient is rejected also because it requires the calculation of Chi-square and as well it is not a particularly powerful test.

The development of the statistic K (Kappa) by Cohen (1960) and its further refinement (Cohen 1968, Fleiss 1971, Light 1971) has provided a technique to measure nominal scale agreement among two or more observers. Kappa was introduced by Cohen (1960) as a measure of agreement between a fixed pair of raters for nominal data. This was refined to provide for the incorporation of ratio-scaled degrees of disagreement so that the gravity of disagreement or partial credit could be taken into account, and this was termed Weighted Kappa (Cohen, 1969). As with K, its use is restricted to the case both where the number of raters is two and where the same two raters rate each subject. More recently this limitation has been corrected by Fleiss (1971) whose procedure allows for the generalization of unweighted Kappa

> "to the case where each of a sample of subjects is rated on a nominal scale by the same number of raters, but where the raters rating one subject are not necessarily the same as those rating another. ----An important special case is when subjects are rated by different pairs of raters" (Fleiss, 1971, p.378).

This development also allows an examination of agreement on a particular category or rating.

It seemed then that Fleiss' adaption of Kappa was suited for use in this study in which each subject was rated on a monimal scale by two raters and where the raters rating one subject were not necessarily the same as those rating another. The data available are nominal (rather than contrived interval) in nature and it would be possible to combine data from a number of raters to calculate overall agreement (K). Product Moment correlation coefficients would be more acceptable than results obtained by using the non-parametric test and would carry more power, however K appears on face value to be an acceptable alternative.

2. Decision

It was decided to use the Pearson Product Moment correlation technique for both analyses. The data collected by the Centre staff was used for the test-retest reliability study where data could be grouped. The data collected by the investigator and the research assistant was used for the inter-rater reliability study where data from different raters could not be grouped.

ARTIFACTS AND BIASES

A number of these have already been discussed. An additional bias could have arisen from the fact that the age norms for the items for the Developmental Record were developed on data collected from a representative sample of the population in Adelaide, South Australia. These may not be identical to norms for a Boston-Cambridge population. However the items are concerned with developmental universals at least for a Western population, and so should be fairly closely comparable.

RESULTS

Test-Retest Reliability Study

Ratings were made as follows (see Table 7)

TABLE 7

TEST-RETEST CLASSIFICATIONS

	Classification (Scores)		Number	Total
	TEST	RE-TEST		
	2	2	55	
Agree	1	1	0	
	0	0	2	57
	0	1	3	
	1	0	0	
	1	2	1	
Disagree	2	1	0	
	0	2	0	
	2	0	0	4
TOTAL				61

A Pearson Product Moment Correlation Coefficient of 0.895, $p > .001$ (two tailed) was calculated from the results presented in Table 7.

Inter-rater Reliability Study

Ratings were made as follows (see Table 8).

TABLE 8

INTER-RATER CLASSIFICATIONS

	Classification (Scores)		Number	Total
	RATER 1	RATER 2		
	2	2	34	
Agree	1	1	3	
	0	0	2	39
	0	1	0	
	1	0	1	
	1	2	0	
Disagree	2	1	1	
	0	2	0	
	2	0	1	3
TOTAL				42

A Pearson Product Moment Correlation Coefficient of 0.812, $p > .001$ (two tailed) was calculated from the results presented in Table 8.

INTERPRETATION

The statistical results of the two reliability studies can be interpreted as follows. A fairly high degree of agreement can be reached by different raters using the Developmental Record at different points in time. The r of .89 is in the medium range of agreement for test-retest reliability. Broadly speaking if r^2 (variance accounted for) can be used to stand for the level of agreement it is seen that there is an 80% degree of agreement among raters between assessments. When the correlation is looked at in this way it is realised that there is still a 20% chance of raters disagreeing about an overall retest assessment after a short time lapse.

The inter-rater reliability of this set of data is at best only moderate. The correlation coefficient of 0.812 gives an r^2 of .66. This means that there is only a 66% chance of agreement, i.e. of the child being rated the same by two different raters. These particular results may have been influenced (lowered) by a number of factors which will be discussed below.

For interest, Kappa values were calculated for each set of data using Cohen's original formula (Cohen, 1960) where

$$K = \frac{fo - fe}{N - fe}$$

These gave K scores of .60 for the test-retest data and .75 for the inter-rater reliability. It is interesting to note the apparent reversal in the relationships obtained.

		Test-Retest	Inter-rater
Pearson	:	.895	.812
Kappa	:	.60	.75

This difference can probably be accounted by the lower power of the Kappa statistic and the fact that the calculation uses only part of the date (the "agreement" diagonal). On the other hand the Pearson calculation uses all data, is a parametric statistic and is of higher power. The lower power of Kappa also accounts for the lower value of the statistic obtained. The difference highlights the value of using parametric statistics where possible.

DISCUSSION

The results obtained were in the general direction of those predicted. A number of factors may have intervened to reduce the numerical value of results obtained. The test-retest study was in effect also an inter-rater reliability study because the assessments were made by different raters at the two different points in time. These assessments were made by the Centre staff who were well acquainted with the children. In this case the Developmental Record was used as recommended and the requirements of a test-retest study were made more stringent by having these assessments done by different raters. This only served to strengthen confidence in the results obtained as it reduced the possibility of any unintentional acquiescence or proactive influencing of response by the recorder from one rating time to the next. The recorders did express concern about their interpretation of some items and because of this some restating of the descriptions of behavior items was made. These minor difficulties however would not have influenced overall ratings on the Developmental Record .

The unexpected "lower" correlation value of the inter-rater study requires some comment. It is felt that the lower value, reflecting greater disagreement between raters, could be explained by the conduct of this part of the study. Data was collected in a three day observation period by the investigator who had very little acquaintance with the children, and a research assistant who had spent an extended period in the Centre and who was well acquainted with most of the children. The three "disagree" classifications out of 42 ratings were all in the same direction of the investigator tending to be more lenient in his judgement (see Table). These were less accurate judgements than those made by the other rater as the latter's ratings were confirmed later by examining the ratings done on these three children by staff who were involved in the test-retest study. It is interesting to note that disagreement over three ratings out of 42 was sufficient to reduce the correlation to .812; here the extent of disagreement, as well as the fact of disagreement is taken into account in the actual statistical calculation.

It has been mentioned that the test-retest study was also in effect an inter-rater reliability study but has not been stated as such because of the assumption that would have to be made about grouping data. However the correlation coefficient of .895 does indicate that raters who are well acquainted with their subjects can reach a fairly high degree of agreement. It can not be assumed however that these agreed assessments are accurate. This would be assessed in a later validity study.

A heartening aspect of both studies was the ability of the Developmental Record to discriminate subjects in the Questionable and Developmentally Delayed categories. Again the validity of these assessments could not be assumed but the fact that there was agreement is encouraging. An examination of the data for the inter-rater study indicates agreement on five cases judged as either Developmental Delay or Questionable. In the test-retest study (see Table 7) there was agreement on two cases assessed as Developmental Delay but no agreement on the Questionable category. However three subjects were classified as "Delayed" by one rater and "Questionable" by another and although there was not full agreement both categories do indicate that these children's performance could be discriminated from that of children rated as satisfactory. Further studies will be required using (a) a random sample and (b) a more selected sample of children displaying some form of delay In this way a more detailed analysis of rating and agreement would be made in this area of the Record where greater accuracy and discrimination will help reduce false diagnosis but at the same time will ensure that children who have some form of developmental delay will be identified and referred for more detailed diagnosis and assessment.

Experience in these studies indicated that some refinement and reconsideration of the items included in the Developmental Record was required. This reinforced the opinion held prior to this investigation that all the items included were not necessarily the most satisfactory but had been included on a trial basis. There would have to be more items included in the Gross Motor section from 30 months on and some refinement of Fine Motor items where there is an over reliance on Block-building items.

The study was also valuable in being the first field study of the Experimental Version of the Developmental Record . This highlighted areas for further refinement and provided encouraging indications of moderately high inter-rater and test-retest stability and reliability.

14. SUPPLEMENTARY ITEM ANALYSIS

Field experience gained during the Reliabilities study confirmed the pre field-trial impression that there were sections within the Developmental Record which needed to be strengthened by the addition of further items. In particular these were in the Gross Motor, Fine Motor and Personal-Social development areas in the upper age ranges and within the Fine Motor area where there was some over reliance on block-building items.

As a first step in attempting to meet these deficiencies it was decided to re-examine the 155 items which remained from the original data pool and which had not been included in the 116 items selected for the experimental format. In some cases items had not been included because of overlap, apparent duplication or because they did not fit the developmental model which had been proposed. Other exclusions had been made because of apprently high levels of subjectivity involved in making that assessment or a failure to establish adequate developmental patterns. Particular attention was given to the former group of these excluded items.

Reanalysis of the South Australia norming data was carried out at the Harvard University Computing Centre using a modified SPSS program which provided the same analysis as had been obtained from the program used at SAENET in South Australia. This modification was prepared by Dr. Tom Marx, supported and encouraged by Burton L. White, Harvard Graduate School of Education and financed by the Lily Endowment Group, U.S.A.

The reanalysis provided 49 "new" items which might possibly be included in the Developmental Record however many of these overlapped age ranges which were already adequately covered by existing items. These were not considered for inclusion but were held in reserve in the event that items which have been included prove unsuitable. This left 20 items for further consideration. It was found that all of these could be added to the format by changing the position of items 18, 52, 54, 68, 90 and 106 and excluding items 49 and 94. Item 49 was repititious of other items and item 94 was ambiguous and able to be replaced by more adequate items. Item numbers refer here to those used in the first draft of the Developmental Record.

The twenty supplementary items are set out in Appendix 6 (Supplementary Items List) with the item numbers asterisked to indicate their reference to the numeration of the 271 items included originally in the norming study (see Appendix 1). Six of the 20 supplementary items were added to the Personal-Social domain and five to the Gross Motor area. While these and the eleven other items strengthen the Record to some extent, there are still some "gaps" at the upper end of the Fine Motor, Personal-Social and Gross Motor ages range. This could be attributed in part to the belated decision to extend the Record from 48 to 60 months, in part to the increased diversity of abilities at this age (making it difficult to establish "norms") and in part to the difficulty of identifying behaviours at this age without their deliberate elicitation in a controlled situation.

Some aspects of format and details within the layout of this second version were amended and the items renumbered as a result of experience gained in the field during the reliability studies. It was decided to produce the Record as a double page leaflet and have space available for comment and recommendations. This version (Experimental Version II - Draft) was not prepared for printing and was developed as the prototype for Version III.

Although the completion date for the project had been exceeded it was decided to carry on with plans for a validation study which was considered to be an essential part of the "test development" process. Applications were made for further financial support for the project and this was forthcoming from the South Australian State Unemployment Relief Scheme (SURS). The Grant required that personnel receive supervised training and work experience which would enhance their employment prospects. Because of the further postponement of the effective completion of the project an interim report (Burdon and Teasdale 1978) was prepared at the request of the Office of Child Care to detail progress made on the project to April 1978.

In preparation for the validation study some further refinement of the format was carried out and the result of this is presented as the Developmental Record for Infants and Young Children (Experimental Version III - Draft). This revision clarified certain item descriptions and also simplified the language and instructions presented in the guidelines which accompany the Developmental Record.

15. VALIDITY STUDY.

INTRODUCTION

Various forms or kinds of validity are recognized as essential components or characteristics of any form of measurement. In this particular case the investigators wished to establish the concurrent validity of the Developmental Record for Infants and Young Children (Experimental Version III - Draft) i.e. its ability to correctly identify both normal and developmentally delayed subjects. Concurrent validity is usually established by examining the correspondence between ratings made by the instrument in question with ratings made by an established criterion test.

OBJECTIVE

To establish the concurrent validity of the Developmental Record for Infants and Young Children by showing that developmental delays detected by established, validated, diagnostic psychological tests are also detected by the Developmental Record for Infants and Young Children (DRIYC). This section which reports the validity study will describe the correspondence between DRIYC ratings of "Delayed", "Questionable", and "Satisfactory" with developmental and intelligence quotients obtained by using the Bayley Scales of Infant Development (1969) or the McCarthy Scales of Childrens Abilities (1972) to rate these same children.

METHOD

Three test administrators were trained so that they could instruct early childhood Centre staff in the use of the DRIYC and were themselves given instruction in the use of the Bayley and McCarthy scales. With parental permission, children were assessed on the age-appropriate psychological test and these results were compared with assessments made on the Developmental Record for Infants and Young Children by staff in the early childhood centres. A group of intellectually retarded children were also assessed in a similar manner.

INSTRUMENTATION

The tests selected for comparison with the Developmental Record were the Bayley Scales of Infant Development (BSID) which covers the 3 to 30 month age range, and the McCarthy Scales of Children's Abilities (MSCA) for children over the age of 30 months. Each test has been thoroughly developed and has an excellent reputation. The Bayley provides measures of Mental Development, Motor Development and General Behaviour while the McCarthy reports on six scales including Verbal, Perceptual-Performance, Quantitative, a General Cognitive Index, Memory and Motor. These two scales provide the possibility not only for total scale score comparisons with the Developmental Record but for sub-scale comparisons so well.

TESTERS

Three testers (2 female and 1 male) were appointed for the validation phase of the project. They held either honours or post-graduate qualifications in psychology, two had clinical experience in a variety of settings and one had used the McCarthy Scales in a research project elsewhere in Australia.

TRAINING AND INTER-RATER RELIABILITY

The three test administrators were first familiarized with the nature of the project and the DRIYC itself and then with the procedures for administering the Bayley and McCarthy scales. To this end 25 subjects were tested over a period of 4 weeks and most sessions were videotaped in the laboratory classroom at Salisbury College of Advanced Education. In the first three weeks of the training period two testers worked together in administering the Bayley Scales until each became completely familiar with the administration procedures. After each testing period the videotapes were replayed for an evaluation of the particular administration. This feedback helped considerably in assisting the testers to become familiar with and feel at ease in the test situation and to reach agreement on the administration procedures. Towards the end of the third of these four weeks each of the testers began to make an independent scoring of the videotaped administrations. In the fourth week 8 test administrations (2 McCarthy and 6 Bayley scales) were conducted, videotaped and then scored independently from the videotape by the other testers. Pearson correlation coefficients were computed from these scores.

TABLE 9

INTER-RATER RELIABILITY DATA

SUBJECT	TESTER[1]	SCORES[2]					
McCARTHY SCALE		V	P-P	Q	GCI	MEM	MOT
01	A	66	69	48	124	65	62
	C	66	69	48	124	65	64
	B	66	68	48	124	65	62
02	B	63	61	54	118	57	65
	C	62	59	46	113	57	63
	A	63	63	52	118	57	64
		MENTAL			MOTOR		
BAYLEY SCALE		RAW		MDI	RAW		PDE
03	A	156		127	69		126
	C	157		132	69		126
	B	157		132	69		126
04	B	80		107	33		106
	A	78		99	32		102
	C	79		102	33		106
05	B	96		108	46		124
	A	96		108	46		124
	C	96		108	46		124
06	C	121		100	55		108
	A	121		100	57		119
	B	121		100	57		119
07	C	123		57	56		74
	A	121		55	56		74
	B	122		56	56		74
08	A	86		150	30		112
	B	85		150	29		108
	C	Not scored					

Pearson Product Moment Correlation Coefficients ranged from 0.96 to 1.00.

Note 1. Tester listed first for each subject conducted the test.

2. Mean scores for McCarthy: All 50 except GCI = 100.
Bayley: MDI and PDI = 100.

It is realised that this is not the classical procedure used to establish inter-rater reliability but it would have been quite inhumane to have subjected the same child to three different test administrations. To have done this for a number of subjects would also have presented many time and organization problems and time especially was important because the testers could be employed for only a limited period.

The actual videotaped test administrations used to establish inter-rater reliability were rotated among the three testers so that each conducted at least two of the videotaped tests. These tests were then scored independently on separate test booklets, by the two other test administrators. This inter-rater reliability data is presented in Table 9. The inter-rater reliability coefficients were very high (0.96 to 1.00) and reflected in part the thorough training which had been conducted. It must be recognized though that the close agreement of scores could reflect the procedure that was adopted. Once a test was on videotape there was no possibility of the two others influencing that administration, all they could do was to score what had been administered. This must certainly bias how the scoring was done, in many cases the scorer has little choice, his judgement is almost predetermined.

To this extent it would be more accurate to say that the correlation coefficients reflect agreement more on the scoring than on the administration of the tests. On the other hand however the testers did, after the scoring had been completed, discuss the actual test administrations and found very few situations or incidents where they disagreed about the actual administration or the later interpretation and scoring. The investigators were confident that while the actual correlation coefficients were very high and displayed some positive bias they did reflect very close agreement between and among the testers on both the administration and scoring of the two psychological tests.

TRAINING AND USE OF THE DRIYC. (DEVELOPMENTAL RECORD)

The initial task for the three test administrators on contacting the Centres was to train the staff there in the use of the DRIYC. The chief investigator had already conducted training sessions with the three test administrators so that they were thoroughly conversant with the Record and its administration. When this phase of the study began however it was found that the bulk of the training of the centre staff was conducted by the male tester (at St. Peters, Sunedin and Campbelltown) and the chief investigator (at St. Francis and at Strathmont). The training was conducted on an individual basis with the trainer taking the learner slowly through the "Draft Guide", explaining each section point by point, answering questions and finally showing one or two assessments on a Record Form. It was found with very few exceptions that the use and administration of the Developmental Record was learnt quite quickly by the day care centre staff. After the formal training session the staff members were encouraged to complete two assessments and then to check problems or difficulties with any of the three testers before carrying on with any further assessments. Many of these procedures and suggestions have been incorporated in the current version of the administration guide.

SAMPLE

The validation study required that the developmental assessment was conducted by having the DRIYC used by those who had a good knowledge of the children being assessed. It was decided that fairly large subject pools could be available in some early childhood centres (day care centres, preschools and kindergartens) in the Adelaide metropolitan area where the staff and caregivers would have extensive first hand knowledge of the children in their care. In selecting the centres an attempt was made to ensure that subjects would be available from a range of suburbs and socio-economic backgrounds.

Approaches were made to the directors or proprietors of five early childhood centres and after discussion about the requirements of the study, three centres agreed to participate. A letter explaining the purpose of the study and giving details of the psychological tests was sent to the parents of children attending these three centres. The letter also asked that parents co-operate in the study by completing the consent form which was included to authorize their child to be tested on either the Bayley or the McCarthy scales.

Once the centres had been selected the sample gained from them was determined by parental response and consent. At one centre slightly less than 50% of parents gave consent, at another there was a 100% response and 98% consent rate. The samples were further tailored by the reactions of the children themselves when approached for testing. Some refused to accompany the tester, some came reluctantly but then refused to start the test while others refused to finish a test when part way through.

In order to extend the range of subjects included in the validation study and to gain field based experience in this specific situation it was decided to include in the study a number of children who had a known developmental delay. As the DRIYC was designed primarily to detect developmental delays in young children it was considered essential to put the instrument to as stringent a validation as possible and to this end a group of intellectually retarded children were included in the study. Another reason for including this group was the recognition that a study of children in early education settings was likely to provide only a very small number of children with some developmental delay and this small number would reduce to power and value of any statistical relationship that might be established.

Approval was sought from the Director of the Intellectually Retarded Services section (IRS) of the South Australian Health Commission to approach parents of retarded children who use IRS facilities and to ask staff to complete the developmental assessment using the DRIYC. The IRS conducts home visiting programs and playgroup sessions at the Strathmont Centre and Crammond

House and the physiotherapists and activities advisers involved have extensive experience with and knowledge of the children involved. Dr. Graham Vimpani of the Health Commission suggested this approach and Dr. Margie Philp was instrumental in making the initial contacts with parents, in arranging for the investigators to meet staff and parents and in general for ensuring that this part of the project ran so well. The majority of children in this sample were Down's Syndrome cases. The testing was conducted at the homes of the children or, for four cases, at the Sunedin School (a non Government school for retarded children) which also took part in the study.

In all, 161 children were tested in the validation study at the following locations.

TABLE 10.

TEST LOCATION OF VALIDATION SAMPLE

LOCATION	n	%
St. Francis Child Care Centre[1]	51	31.7
St. Peters Child Care Centre[2]	50	31.0
Campbelltown Children's Centre[3]	32	19.9
Home (I.R.S. Group)	24	14.9
Sunedin School	4	2.5
TOTAL	161	100.0

Notes:

1. A subsidised child care centre conducted by a religious order and located in Salisbury North.
2. A subsidised child care centre initiated by a local government authority and located in Stepney.
3. A subsidised, integrated early education and day care centre initiated by the State Community Welfare and Education Departments and located in Newton.

The socio-economic status distribution of the children in this study are presented in Tables 11 and 12 by the same two factors as in the norming study namely SES area of residence and parental occupation.

TABLE 11.

VALIDATION SAMPLE DISTRIBUTED BY SES AREA

SES AREA[1]	n(ABSOLUTE)	%(ABSOLUTE)	%(ADJUSTED)
1	14	8.7	9.8
2	56	34.7	39.2
3	14	8.7	9.8
4	31	19.3	21.8
5	28	17.4	19.6
Not Known[2]	18	11.2	-
TOTAL	161	100.0	100.0

Notes:

1. Based on Cleland and Stimson (1975).
2. The majority of missing data cases are from the IRS group.

The S.E.S. area of residence distribution follows that in the norming study (See Table 1) for areas 4 and 5 but diverges markedly in areas 1 to 3. The exceptionally high proportion in area 2 (39.2% adjusted) possibly reflects the location of two of the centres sampled, Campbelltown - Newton and St. Peters - Stepney, which serve areas in the second quintile ranking on socio-economic status (Cleland and Stimson, 1975, pp.114-195). The relatively small representation of status 3 residents (9.8% adjusted) should not have been unexpected in view of the location of the three centres used.

TABLE 12.

VALIDATION SAMPLE DISTRIBUTED BY PARENTAL OCCUPATION

OCCUPATION RANKING[1]	n(ABSOLUTE)	%(ABSOLUTE)	%(ADJUSTED)
1	14	8.7	10.0
2	7	4.3	5.0
3	22	13.8	15.7
4	21	13.0	15.0
5	33	20.5	23.6
6	40	24.8	26.6
7	3	1.9	2.1
Not Known[2]	21	13.0	-
TOTAL	161	100.0	100.0

Notes:

1. Based on Congalton (1969).
2. The majority of missing date cases are from the IRS group.

The distribution of this sample by parental occupation (Table 12) differs from the norming sample in that here both lowest (5,6,7) and highest (1 and 2) status occupations are more predominant (54.3% v's 51% and 15% v's 9.4%) and the sample as a whole tends to be skewed downwards. As with the norming study, no claim is made that this sample is representative and in the absence of similar population data for Adelaide no comparisons can be made.

It is interesting to reflect on the apparent anomoly presented by the data in Tables 11 and 12. It might be expected that the distributions would be similar, that there would be a fairly parallel distribution by occupation and by area of residence. However this does not occur: whereas 49% of the sample live in the two upper status areas only 30.7% hold upper status occupations (rankings 1, 2 and 3) although this proportion increases to 45.7% if ranking 4 is added. In the other direction 54.7% of the sample are in lower status occupations (5, 6 and 7) while only 41.4% live in the lower status suburbs. While comment might be made on the implications of these figures for the providers of day care this was not the purpose of the study so the figures are presented only to the extent that they help describe some of the characteristics of the sample used in this validation study.

The age distribution of the validation sample is presented in Table 13. The fifteen subjects over the age of 30 months who were tested on the Bayley (BSID) were part of the IRS sub-sample. The distribution is not particularly even across the age ranges and is again a commentary on the non-representativeness of the sample. This however has already been acknowledged in describing how the centres were selected and the samples obtained.

TABLE 13.

AGE DISTRIBUTION OF VALIDATION SAMPLE

AGE(months)	TEST USED BSID(n)	MSCA(n)	TOTAL (n)	%
0- 6	3	-	3	1.9
7-12	9	-	9	5.6
13-18	13	-	13	8.0
19-24	23	-	23	14.3
25-30	14	1	15	9.4
31-36	4	16	20	12.4
37-42	2	8	10	6.2
43-48	2	19	21	13.0
49-54	2	22	24	15.0
55-60	4	17	21	13.0
60+	1	1	2	1.2
TOTAL	77	84	161	100.0

DATA COLLECTION

The sequencing of data collection was arranged to ensure that the time lapse between the two assessments would be kept to a minimum. Development is dynamic and if too great a time lapse is allowed between assessments then there can be no guarantee that the same developmental performances are being considered. This has been discussed already in relation to the reliability studies which were conducted in Massachusetts (see Section 13 above). It was decided that a two week time lapse would be the greatest that could be tolerated.

The initial intention had been that the Centre staff would complete a few developmental assessments and that letters and consent forms would be sent out for these few children who would then be given the psychological assessment. It soon became obvious in the day to day running of a large early childhood centre that it was not feasible to keep track of tests, letters and consent forms and to conduct a reasonable number of tests as well. In some cases the consent forms were not returned as had been anticipated so the testers were left without children to assess and the centre staff were assessing children whose results could not be used. To overcome this problem it was decided to reverse the procedure, letters were sent out in bulk and a pool of subjects were established at each centre. As children were tested the centre staff were asked to complete a Developmental Record for each of these children and in this manner a much more efficient procedure was developed.

Testing of the intellectually retarded children was purposefully left to the latter part of the project by which time the testers would be thoroughly conversant with the tests and confident in their administration. After the chief investigator had established contact with the parents, physiotherapists and activity leaders at Strathmont Centre to explain the project he conducted training sessions there for those staff members who would be completing the developmental assessment. As not all parents were able to come to the play group sessions it was necessary for the IRS staff to explain the project and obtain the consent of these parents during their home visits which took place fortnightly. Once the consent forms were completed the testers were able to contact parents to arrange a time when the testing could be carried out at home. At the same time the IRS staff completed their assessments using the Developmental Record.

DATA PROCESSING AND ANALYSIS

As the tests were completed and the Developmental Records were collected from the centres the assessments were checked, paired and recorded ready for punching on to computer data cards. The computation of all test scores was double checked prior to entry on the record forms. The overall evaluation on the Developmental Records was also checked, prior to recording, on the basis of the criteria laid down in the Draft Guide. In addition to the test results, some limited demographic information (occupation of main wage earner and suburb of residence) was collected in order to provide some points for comparing the norming and the validation samples and for discussing their representativeness of the population of metropolitan Adelaide.

Data was processed using a variety of SPSS programs on the SAENET computer facilities at the Levels Campus of the South Australian Institute of Technology. Ken Barnes at SAENET and Garry Childs at Salisbury C.A.E. provided valuable technical advice at this stage of the study.

The analyses performed were first to calculate Pearson Product Momement correlation coefficients between ratings made on the DRIYC and scores obtained on the Bayley or the McCarthy scales and subscales. As well, the mean developmental quotient of the BSID and MSCA scales were calculated for overall distribution and for distribution within each of the three DRIYC rating areas namely Developmentally Delayed, Questionable and Satisfactory. A further analysis examining the distribution of DRIYC ratings against ranges of scores on the criterian tests.

RESULTS

Table 14 presents descriptive statistics regarding the sample in terms of the numbers tested in each sub-category.

TABLE 14.

CRITERION TEST SCORES OF VALIDATION SAMPLE

Criterion Test		Group	Index Score			
			n	Mean	S.D.	Range
McCarthy	GCI	Full	84	116.14	13.28	78 - 150
Bayley	MDI	Full	77	99.62	32.41	50 - 150
		IRS[1]	28	63.78	19.83	50 - 112
		Other[2]	49	120.10	16.26	93 - 150
	PDI	Full	77	97.81	28.68	50 - 150
		IRS	28	67.10	17.91	50 - 117
		Other	49	115.35	16.06	84 - 150

1. IRS = Subsample of children from Intellectually Retarded Services.
2. Remainder of BSID sample i.e. those in day care centres.

The mean scores for the group tested on the McCarthy scale and the subsample "others" tested on the Bayley scales are well above the mean that might be expected of a random sample of the population. The IRS subsample are, as anticipated well below the expected mean and range of scores on the Bayley scales. When combined the two subgroups bring the mean scores close to but slightly below an expected population mean although the distribution is greater. The higher than average scores for the non-retarded children reflects the very selective nature of the samples and in particular the decision by many parents in two of the centres not to participate in the study. It could have been that in some cases the reluctance of a few parents to participate reflected a desire to "protect" a child suspected of having some slight developmental lag or delay.

An examination was made of the scale scores obtained by children on the criterion tests in relation to the developmental ratings assigned to them on the DRIYC. These results are presented for the full samples and the Bayley subgroups (see Table 15).

TABLE 15.

CRITERION TEST SCORES AND DRIYC RATINGS

Criterion Data	Delayed	Questionable	Satisfactory	Total
GROUP		McCARTHY, GCI		
n	2	5	77	84
Mean	108.00	103.00	117.21	116.14
Standard Deviation	12.73	14.14	12.88	13.28
Range	99-117	78-113	84-150	78-150
GROUP		BAYLEY, MDI, TOTAL		
n	31	5	41	77
Mean	69.71	120.60	119.68	99.62
Standard Deviation	26.93	16.59	16.22	32.41
Range	50-150	102-145	84-150	50-150
GROUP		BAYLEY, PDI, TOTAL		
n	31	5	41	77
Mean	70.55	104.80	117.56	97.80
Standard Deviation	20.92	16.08	15.05	28.68
Range	50-132	84-116	89-150	50-150
GROUP		BAYLEY, MDI, IRS		
n	27	0	1	28
Mean	63.04	-	84.00	63.78
Standard Deviation	19.79	-	0	19.83
Range	50-112	-	84	50-112
GROUP		BAYLEY, PDI, IRS		
n	27	0	1	28
Mean	65.37	-	114.00	67.10
Standard Deviation	15.07	-	0	17.91
Range	50-114	-	114	50-114
GROUP		BAYLEY, MDI, OTHER		
n	4	5	40	49
Mean	114.75	120.60	120.57	120.10
Standard Deviation	27.43	16.59	15.37	16.26
Range	93-150	102-145	93-150	93-150
GROUP		BAYLEY, PDI, OTHER		
n	4	5	40	49
Mean	105.5	104.80	117.65	115.35
Standard Deviation	19.42	16.08	15.42	16.05
Range	90.132	84-125	84-150	84-150

The distribution of ratings made on the DRIYC were examined against ranges of scores on the criterion tests for the groups and sub-samples in the study and are presented in Table 16.

TABLE 16.

DRIYC RATINGS AND CRITERION TEST SCORES

DRIYC	Criterion Test Score Ranges (MSCA and BSID)						
	<70	70-79	80-89	90-99	100-109	110+	TOTAL
			McCARTHY, GCI				
Delayed	0	0	0	1	0	1	2
Questionable	0	1	0	0	3	1	5
Satisfactory	0	0	1	4	17	55	77
TOTAL	0	1	1	5	20	57	84
			BAYLEY, MDI, TOTAL				
Delayed	19	3	2	2	1	4	31
Questionable	0	0	0	0	1	3	4
Satisfactory	0	0	1	4	5	32	42
TOTAL	19	3	3	6	7	39	77
			BAYLEY, PDI, TOTAL				
Delayed	15	8	3	0	1	2	29
Questionable	0	0	1	1	0	1	3
Satisfactory	0	0	1	6	8	30	45
TOTAL	15	8	2	7	9	33	77

The most striking feature of these results is the indication that the lowest scale score range which the DRIYC classified as "Satisfactory" was 80-89 (the actual scores were 84 for the GCI and 89 and 84 on the MDI and PDI scales of the Bayley). This means that the DRIYC correctly identified as Delayed all children in the sample who had scale scores of <84. The figures in Table 16 also indicate that of the 31 children identified as Delayed by the DRIYC, 23 had scale scores of <80 and only 5 had scores over 100. The DRIYC does not miss identifying any child with a low IQ/DQ score.

The analysis of results also examined coefficients of agreement on the ratings of tests. These were measured by using the Pearson product momement correlation technique and the relationships are presented in Table 17.

TABLE 17.

CONCURRENT VALIDITY COEFFICIENTS

DRIYC AND CRITERION TEST SCALES AND SUBSCALES

DRIYC	CRITERION TEST	CORRELATION	SIGNIFICANCE
DRIYC	PDI, (BAYLEY)[4]	0.787	.001
	MDI, (BAYLEY)[5]	0.737	.001
	GCI, (McCARTHY)[6]	0.234	.016
DR COGNITIVE[1]	MDI, (BAYLEY)	0.195	.04
	GCI, (McCARTHY)	0.414	.001
	MEMORY (McCARTHY)	0.296	.016
	VERBAL (McCARTHY)	0.320	.001
	PERCEPTUAL (McCARTHY)	0.347	.001
DR FINE MOTOR[2]	PDI, (BAYLEY)	0.366	.001
DR GROSS MOTOR[3]	PDI, (BAYLEY)	0.362	.001

1. DR COGNITIVE = Cognitive subscale of DRIYC
2. DR FINE MOTOR= Fine Motor subscale of DRIYC
3. DR GROSS MOTOR= Gross Motor subscale of DRIYC
4. PDI = Performance Development Index of BSID
5. MDT = Motor Development Index of BSID
6. GCI = General Cognitive Index of MSCA

Apart from the reasonably high coefficient of agreement between the DRIYC ratings and the PDI and MDI scales of the Bayley there are no other really strong relationships. There are however indications of some statistically significant but low level sub-scale agreements in the motor development areas between the Bayley and the DRIYC and in the cognitive areas between the McCarthy and the DRIYC. It is obvious that a few discrepant cases (e.g. cases where children are rated as Delayed but have above average criterion test scores) and the paucity of data for children of below average test scores on the McCarthy have covered or clouded any stronger relationship which might have existed.

DISCUSSION

The results obtained in this validity study though not as definitive as had been anticipated indicate that the Developmental Record for Infants and Young Children is, when used in field situations as designed, able to identify and isolate children who have some potential for or actual displayed, (by test), developmental delay. The results presented especially in Table 16 support this claim. There are no children in the total sample of 161 who were rated as "Satisfactory" who have a scale score of less than 84, in other words no child who had a test score which could be rated as showing developmental delay was missed by the Developmental Record. This result is particularly pleasing when it is compared with similar studies on the Denver Developmental Screening Test (Frankenberg, Goldstein and Camp, 1971) where the Denver test failed to pick up 2 children with DQ/IQ scores below 70 and 13 others with scores between 70 and 79 (out of a total of 152 children) in one study and another 10 (out of a total of 172 children) with scores in the 70-79 range in a second study. The investigators have already indicated that they would prefer to err in making more "false positive" screenings than "false negatives". An incorrect initial screening can be rectified later, however a screening that doesn't show a possible delay when it should is of little value.

The results do indicate, that for this group the Developmental Record does pick as Developmentally Delayed some children who have average to well above average scale scores. There can be many possible (sometimes overlapping) explanations for this beside the fact that the instrument itself could be at fault, these range from rater bias or inexperience to test performance well beyond behaviour that is typical for that child. The solution to this problem probably lies in providing skilled and adequate training for the users of the Developmental Record rather than in making the "success" criteria on items less stringent, for this latter move would only serve to allow possible developmental lags to slip by without being identified. It is worth noting (see Table 16) that there are only a few children with scale scores of >100 who are rated as being Developmentally Delayed. In the actual study 2 or 3 quite anomolous test and rating results were evident and these cases tended to bias the results and reduce the supportive value of the results presented.

The cases of all subjects whose scale scores were more than a few points below the mean of 100 were examined to provide more specific data by which to comment on the DRIYC. In 10 cases out of the total of 14 where scale scores were more than 3 or 4 points below the mean this slight deviance (which in only 2 cases exceeded 10 points) was identified or indicated by at least one Item Delay, sometimes more, in at least one section or domain of the DRIYC. Of the four cases where there was no DRIYC indication in even one area, two were examples where the DRIYC had not been completed until 6 and 8 weeks respectively after the criterion test so allowing for the children to "catch up" between the test and the development assessment. Of the two other cases , in one the child's MDI score was 96 and the PDI score was 122 while in the second the child's motor scale score on the McCarthy was 45 (mean of 50).

CONCLUSIONS

This informal analysis serves to strengthen even further the claim made on the basis of the more formal analysis that the DRIYC has the particular ability to identify potential or actual developmental delays and that this ability is even greater than that demonstrated for the Denver Developmental Screening Test which has a much longer history of development, analysis and refinement. While the results presented cannot support the formal statistical requirements of demonstrated high positive correlation coefficients between results obtained from two kinds of developmental assessment there is very strong evidence that the Developmental Record for Infants and Young Children displays high concurrent validity, especially in view of its ability to identify even minor deviations in development. Further support for the DRIYC stems from the fact that the lowered value of the statistical analysis presented above was caused by a "positive" fault in that the Record was classifying as Delayed too many rather than not enough subjects. The investigators would rather have this as a possible "fault" than the situation where there were children rated as "Satisfactory" by the DRIYC who have Bayley or McCarthy scale scores below the 80 point mark.

IMPLICATIONS

This validity study also serves to add further support to the contention that the DRIYC is a quick, efficient, easy to use (and to learn to use and understand) early screening record that is most suitable for use in test administration by those who might lack formal testing qualifications but who do have fairly constant contact with the children being assessed. It is observation based and does not require a formal face-to-face test administration. To this extent it is also economic in not being demanding of time, space and special equipment, and has the advantage of being reuseable and showing at a glance how the child is developing from one time to another.

There is increasing interest in implementing periodic health and developmental screening programs in Australia. The operation of two screening programs which were observed in Massachusetts, U.S.A. and their implications for Australia are discussed in the paper "Developmental Screening in Massachusetts; Some Impressions, Some Implications" which was prepared by the senior investigator and is included as Appendix 7.

16. RECOMMENDATIONS

1. The Developmental Record for Infants and Young Children is now ready to be used for the purposes for which it has been developed and funded.

2. The Developmental Record for Infants and Young Children should be produced commercially on a non-profit basis so that it can be made available for use in Australia (and elsewhere if required).

3. This commercial production and distribution should be handled by the Australian Council for Education Research.

4. A technical manual will have to be produced before the Developmental Record for Infants and Young Children can be used publically.

5. The present name of the instrument is cumbersome and should be replaced by the shorter more appropriate Australian Child Development Record (ACDR).

6. The use of the DRIYC should be limited prior to commercial production. Potential users should consult the senior investigator about using the DRIYC in this pre-production period. The DRIYC should not be used in any major research study at this stage and especially not until the technical manual is produced. If the DRIYC is used in some smaller way then the results should be made available to the senior investigator.

7. If the Office of Child Care does not wish to use the Developmental Record for Infants and Young Children nor recommend its commercial production by ACER then it is recommended that the instrument be handed back to the senior investigator so that he can approach the Council of Salisbury College of Advanced Education to produce the ACDR on a "break-even", non-profit basis as a service to the Australian community.

8. As considerable interest is being expressed in the DRIYC it is thought that these recommendations should be considered by the Office of Child Care at its earliest convenience.

9. The production, publication and release of the ACDR could well be linked with and be part of Australia's contribution to the International Year of the Child.

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DEVELOPMENTAL RECORD
FOR
INFANTS AND YOUNG CHILDREN

(EXPERIMENTAL VERSION III - DRAFT)

B. E. J. Burdon
Salisbury College of Advanced Education

PERCENTAGE OF CHILDREN PASSING: 25 50 75 90

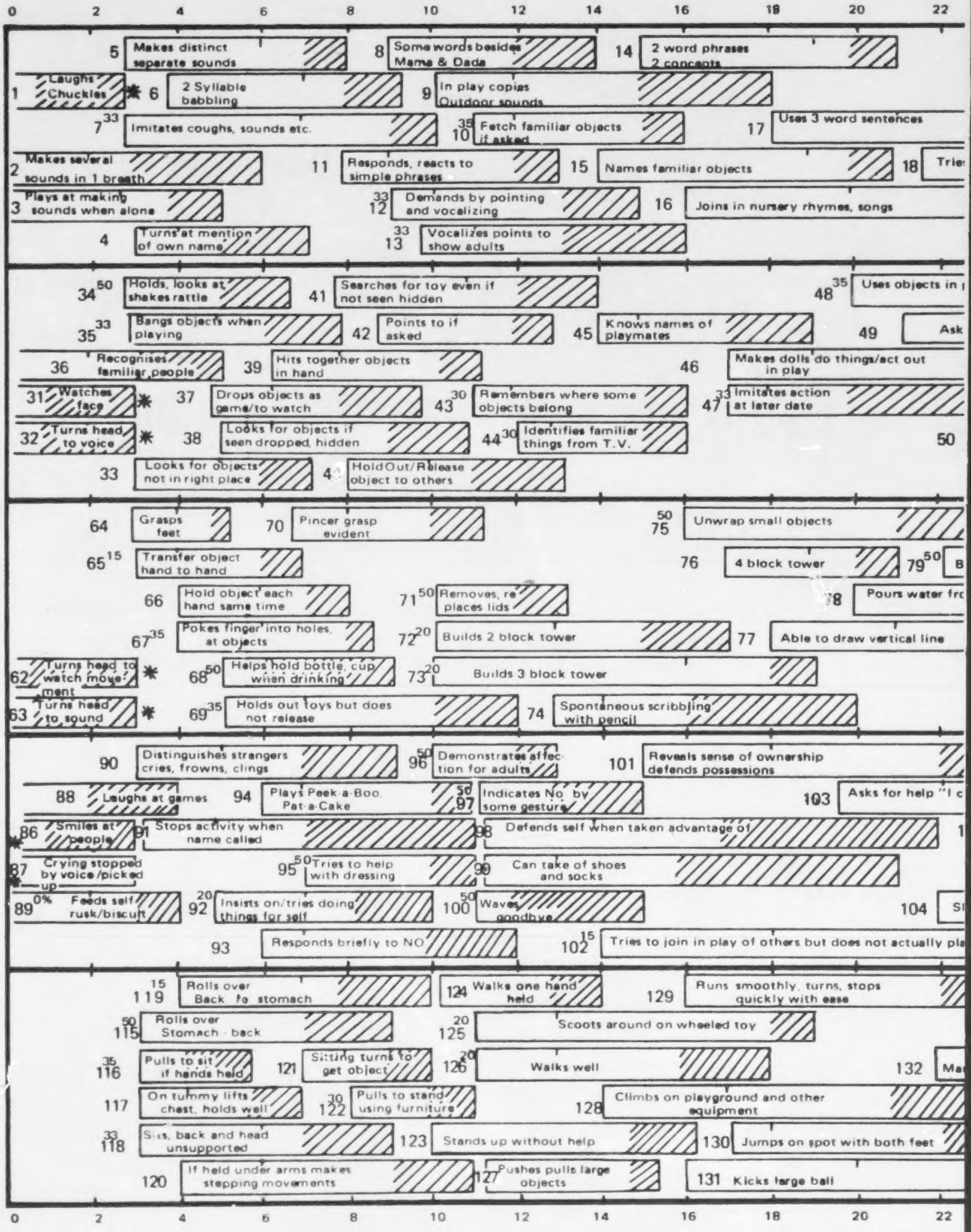
Item Number: 5

✱ INDICATES 100% AT 3 MONTHS

DEVELOPMENTAL RECORD FOR INFANTS AND YOU

Child's Surname.......................................

Name of Recorder.......................

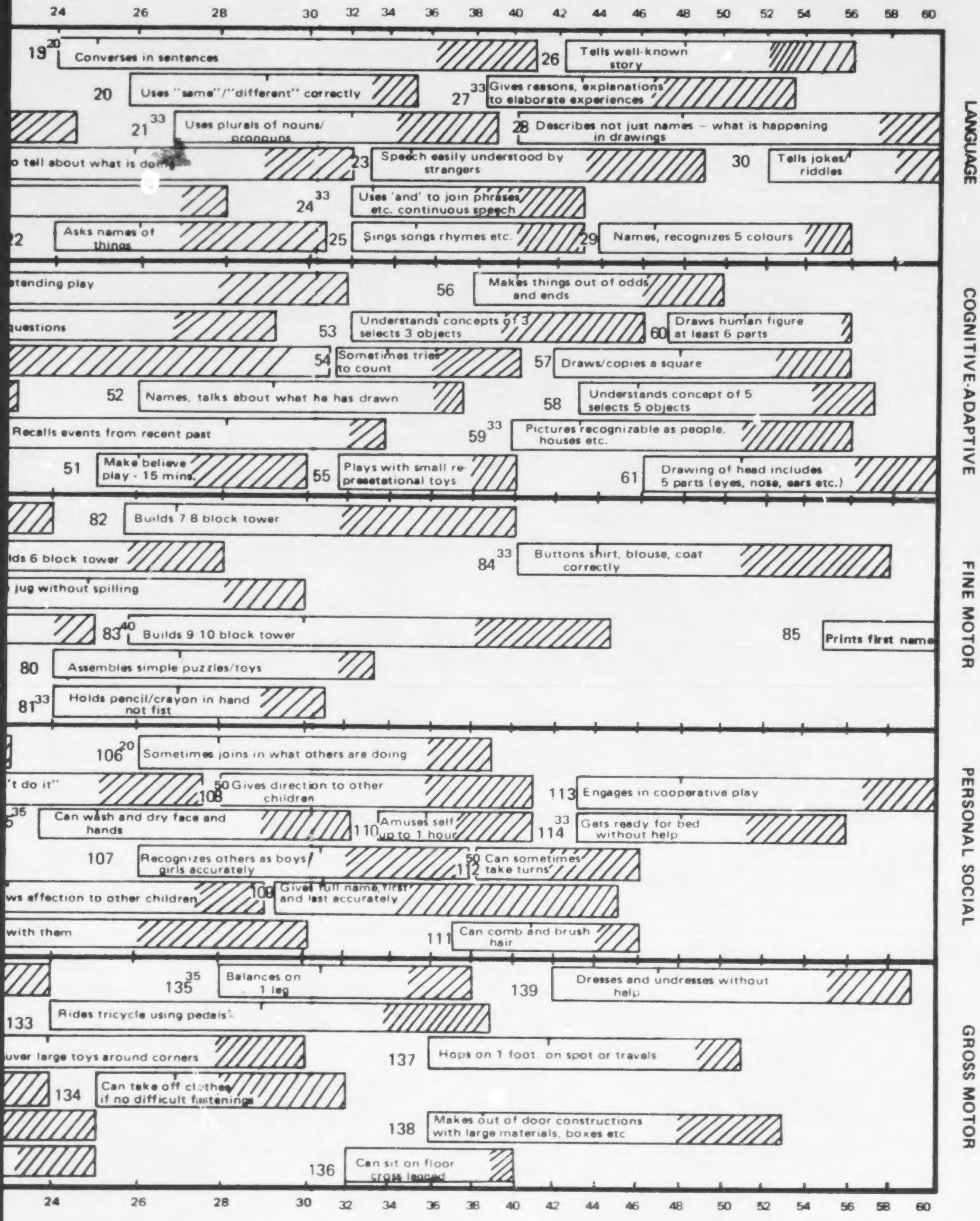


G CHILDREN (EXPERIMENTAL VERSION III – DRAFT)

iven Name..

....

	Year	Month	Day
Date of Recording	....	....	....
Date of Birth	....	....	....
Age at Recording	....	....	....



Notes

DRAFT GUIDE OF
ADMINISTRATION AND SCORING PROCEDURES
to accompany
THE DEVELOPMENTAL RECORD FOR INFANTS AND YOUNG CHILDREN (EXPERIMENTAL VERSION III)

Barry E. Burdon,
Salisbury College of Advanced Education,
Salisbury East. S.A. 5109.
September, 1978.

A NOTE TO THE INSTRUCTOR

It has been found that the best training procedure for instructing others in the use of the Developmental Record is to actually simulate the procedure itself.

To this end it is recommended that Instructor and Trainee each have copies of the Guide, a Developmental Record form and a set of Behaviour Check Lists.

Tell the trainee that you will read through the instructions with her/him and will answer questions as you go. Indicate that you will give a general outline at first and then go in to more detail.

When you have read through the guide to the end of the section General Administration Instructions on the second page you should then start the simulation by going through the procedure of completing a Developmental Record as if for a real child.

Users of the Developmental Record must become familiar with the detailed description of the items contained in this Guide.

INTRODUCTION

Many cases of delays in development are not discovered until the early years of middle childhood especially when difficulties begin to show in the first year or so of the child's schooling. A number of the causes of slow development can be treated or their effects modified if diagnosed early enough. It is important then that the children who have these problems in development and behaviour are discovered as early as possible so that appropriate action might be taken.

The Developmental Record for Infants and Young Children has been devised to provide a method of discovering early developmental lag or delay. It is not an IQ test and in fact has been designed for use by those who do not necessarily have training in the administration of psychological tests. However it is essential that those who use the Record are familiar with and have a good knowledge of the children whose development is being considered. The information which is recorded is not gained in a test type context but from observing the children in a number of day to day situations. The Developmental Record is made up of a number of items of behaviour which have been found to be appropriate for children of particular ages.

The Developmental Record is easy to use. It may look difficult at first glance but it is very simple and all that you have to do is to follow these steps.

1. Work out the child's age on that particular day.
2. Mark this on the Record by drawing in a line.
3. Check off on the Record the things that the child can do. You will usually be able to do this from your day to day knowledge of the child.

We will discuss these steps in detail in a few minutes.

FORMAT

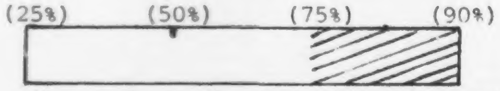
Now let us look at the Developmental Record more closely.

Across the top and bottom of the Developmental Record are lines which indicate ages at 2 month intervals. Note that these intervals are closer after age 30 months.

On the Record sheet itself there are a number of bars or rectangles. Each of these represent an item of behaviour or a skill which children develop during a certain age range. Some examples are set out here to show how these behaviours and age ranges are indicated on the Record itself.

Examples:

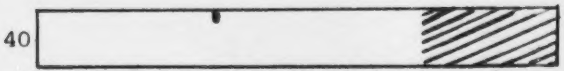
1. Standard bar.



Note: The mark on the top line represents 50%

This bar indicates at what age 25%, 50%, 75% and 90% of most children acquire that behaviour.

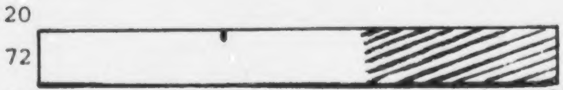
2. Actual format.



This is an example of a behaviour items as you will find it actually represented on the Record sheet.

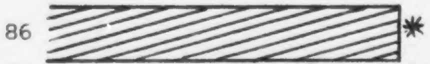
In the actual format percentages are not shown. The item number is shown at the lower (left hand) end of the bar.

3. Variation 1.



Here the left hand end shows 20% (not 25% as in most items) of children have acquired this behaviour. If you look at No. 72 on the Record, you see 20% of most children can build a 2-block tower at 10 months, 50% at 13 months, 75% at 15 months and 90% at 19 months.

4. Variation 2.



Numbers 1, 31, 32, 62, 63, 86, 87 are open at the left hand end and shaded all over and marked with an asterisk. This indicates 100% performance at 3 months.

A child is observed in various behaviours appropriate for his age. In this way a child is judged on only a small number of items (rectangles) from left of the age line to the right of the age line. To help out in this process a set of Behaviour Check Lists have been drawn up, these list the behaviours which are appropriate for children in particular age ranges.

The items are arranged to cover five areas of development; Language, Cognitive Adaptive, Fine Motor, Personal-Social, Gross Motor, and each item covers a range of ages during which children have been shown to develop without cause for concern.

GENERAL ADMINISTRATION INSTRUCTIONS

The usefulness of this record depends on the observer seeing what the child can do or on having some other reliable observation of that behaviour e.g. from another person who knows the child well. In some cases you may not be able to obtain all the information you need in this way. When this happens you should set up some kind of play activity for the child so that you can introduce the activity and observe the children without intruding. The Developmental Record has been designed to eliminate the formal test situation and to use the knowledge and experience of those who have been caring for the children or who have been involved with them for some time.

RECORDING THE CHILD'S AGE

The child's age will need to be calculated so that you can record his behaviours accurately. This is done by completing the details of birthdate and date of recording in the top right hand corner of the Record form and calculating the child's age by subtracting birthdate from recording date as follows -

Examples:

EXAMPLE "A"

	Year	Month	Day
		11	39
Date of Recording	1977	~~12~~	~~9~~
Date of Birth	1974	4	20
Age at Recording	3	7	19

i.e. 9 days + 30 days (1 month) you have taken from the month column. This reduces the 12 months to 11.

Note: When "borrowing" use 30 days = one month

EXAMPLE "B"

	Year	Month	Day
	1977	14	
Date of Recording	~~1978~~	~~2~~	11
Date of Birth	1975	11	8
Age at Recording	2	3	3

In this example you need to "borrow" one year i.e. 12 months so you have to reduce the year 1978 to 1977.

DRAWING IN THE AGE LINE

Use the month ages shown at the top and the bottom of the record form as a guide for drawing the age line. Draw a vertical line through the five sections of the test form at the child's exact age.

In the example A calculated above 3 years, 7 months, 19 days, is $43^{2}/3$ months, so the age line should be drawn through the five sections from top to bottom of the form 2/3rds of distance between the 43 and 44 month markers. In example B, the age line would be drawn slightly to the right of 27 months (since 3 days = 1/10 month).

NUMBER OF ITEMS TO BE GIVEN

Use your Behaviour Check Lists at this time.

The number of items to be given will vary with the age of the child being tested. Begin each section with items below the age of the child (to the left of the age line) and work up to his age continuing to record upward to the right until he has three "no passes" in that section (This will not apply to older children). All items through which the age line passes should be considered. In addition each section should have at least 3 items which are "passes" and three which are "no passes" (this will not always apply for older children). Make sure that the child has several "passes" to the left of any "no pass".

Notes. You may need to use two Behaviour Checks Lists to obtain the required range of items.
A detailed description of each item is found later in this Guide.

RECORDING BEHAVIOURS

Code for recording child's behaviour

Y for Yes (Observed by you)

R for Yes (Reported by another observer)

N for No (Definitely cannot perform the particular item)

U for Unable to Judge (No opportunity to observe, judge or to obtain report from another observer or cannot make accurate judgement).

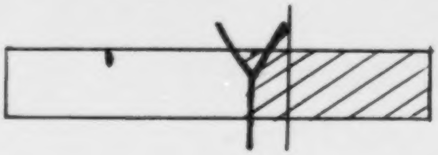
Recording and writing down your observations

It is best to use a red, green or blue pen so that the letters will stand out.

Write down the letters as follows

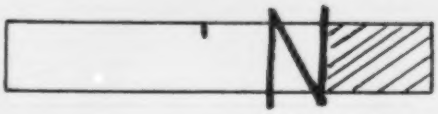
1. When the age line passes through the item write the letter just to the left of the age line.

e.g.



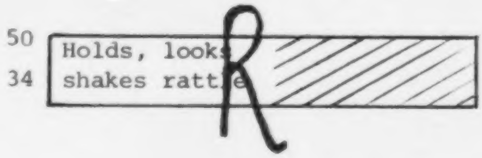
2. When the age line does not pass through the item then write the letter just to the left of the shaded section.

e.g.



In some items there will be a clear space for the code letters but on others you will have to write the code letter over the top of printing on the Record sheet itself.

e.g.



Once you have coded the appropriate number of items in each of the five sections you can begin to interpret the child's developmental progress.

INTERPRETATION OF RESULTS

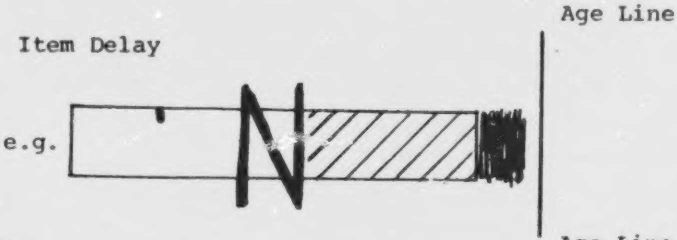
1. INDIVIDUAL ITEMS.

The first step is to see whether any of the items show some lag or delay in development; this is called an ITEM DELAY.

An ITEM DELAY is defined when any item which is scored as "NO" is found to be completely to the left of the age line. This means that for that item, the child's development is delayed in relation to that of 90% of most children.

Note: Delayed items should be emphasized by colouring in the right end of the bar.

Example: Item Delay



2. OVERALL PATTERN.

Overall results on the Developmental Record for Infants and Young Children are interpreted as follows:

S for Satisfactory. (No delay evident).
Q for Questionable. (Reassess before taking further action).
DD for Developmental Delay. (Refer for more detailed diagnosis).
NR for No Result. (Could not make accurate judgement).

Detailed examples of interpretation are given in the following pages.

These interpretive judgements are made as follows.

Developmental Delay: (DD)	Two or more sections which have two or more Delays. or One section with two or more Delays plus one or more section(s) with one Delay and no Yes items intersected by the age line.
Questionable: (Q)	One section with two or more Delays. or One or more sectors with one Delay and no Yes items intersected by the age line.
No Result: (NR)	When U (Unable to judge, observe, or obtain any report) judgements are frequent enough to cause similar patterns for Developmental Delay or Questionable if the U and Q items were scored as No.
Satisfactory: (S)	Any situation not listed under Developmental Delay (DD), Questionable (Q), or No Result (NR).

Note: The Interpretation pattern is the same as that employed in the Denver Developmental Screening Test and is adapted directly from that instrument.

INTERPRETATION OF RESULTS

1. DEVELOPMENTAL DELAY.

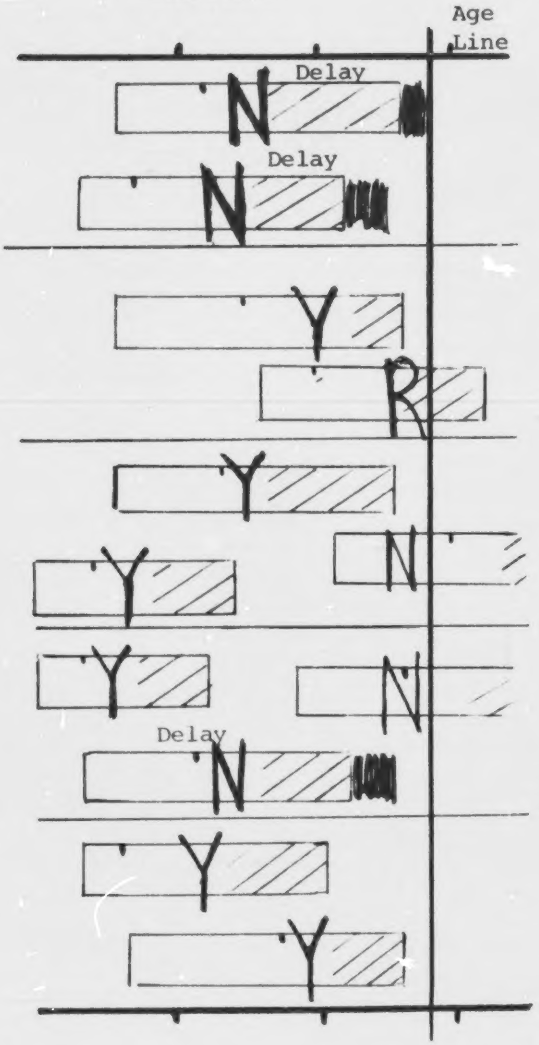
Criteria.

1. There are 2 or more sections with 2 or more delays

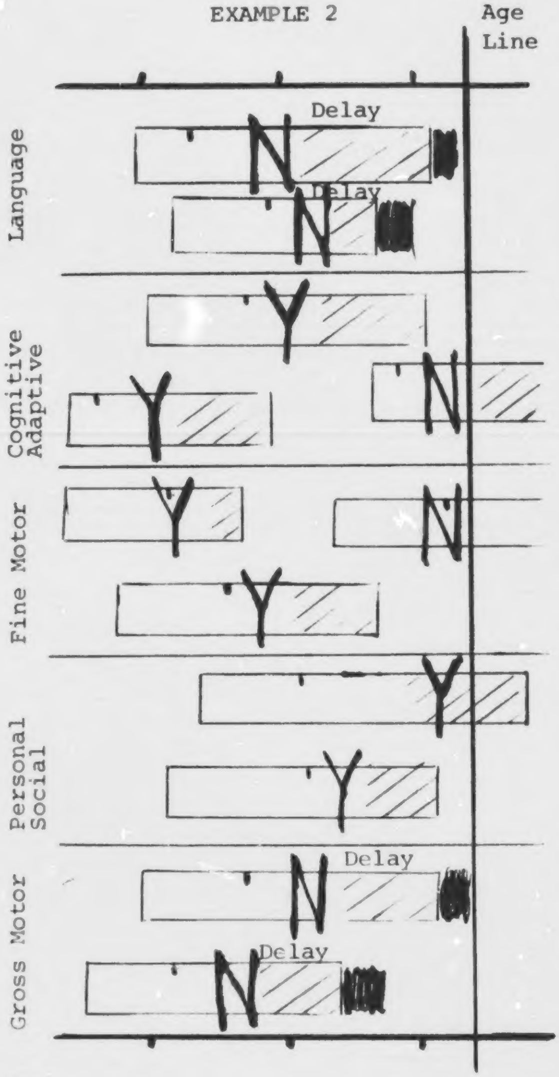
   or

2. There is 1 section with 2 or more delays and 1 or more sections with 1 delay and no YES items intersected by the Age Line.

EXAMPLE 1


Age Line
Delay
N
Delay
N
Y
R
Y
Y
N
Y
N
Delay
N
Y
Y

EXAMPLE 2


Age Line
Language
Delay
N
Delay
N
Cognitive Adaptive
Y
N
Y
Fine Motor
Y
N
Y
Personal Social
Y
Y
Gross Motor
Delay
N
Delay
N

OVERALL INTERPRETATION.

Example 1 = DEVELOPMENTAL DELAY: Using Criteria 2 there is 1 section with 2 delays (Language) and 1 section (Personal-Social) with 1 delay and no YES items crossing the age line.

Example 2 = DEVELOPMENTAL DELAY: Using Criteria 1 there are 2 sections (Language and Gross Motor) with 2 Delays in each.

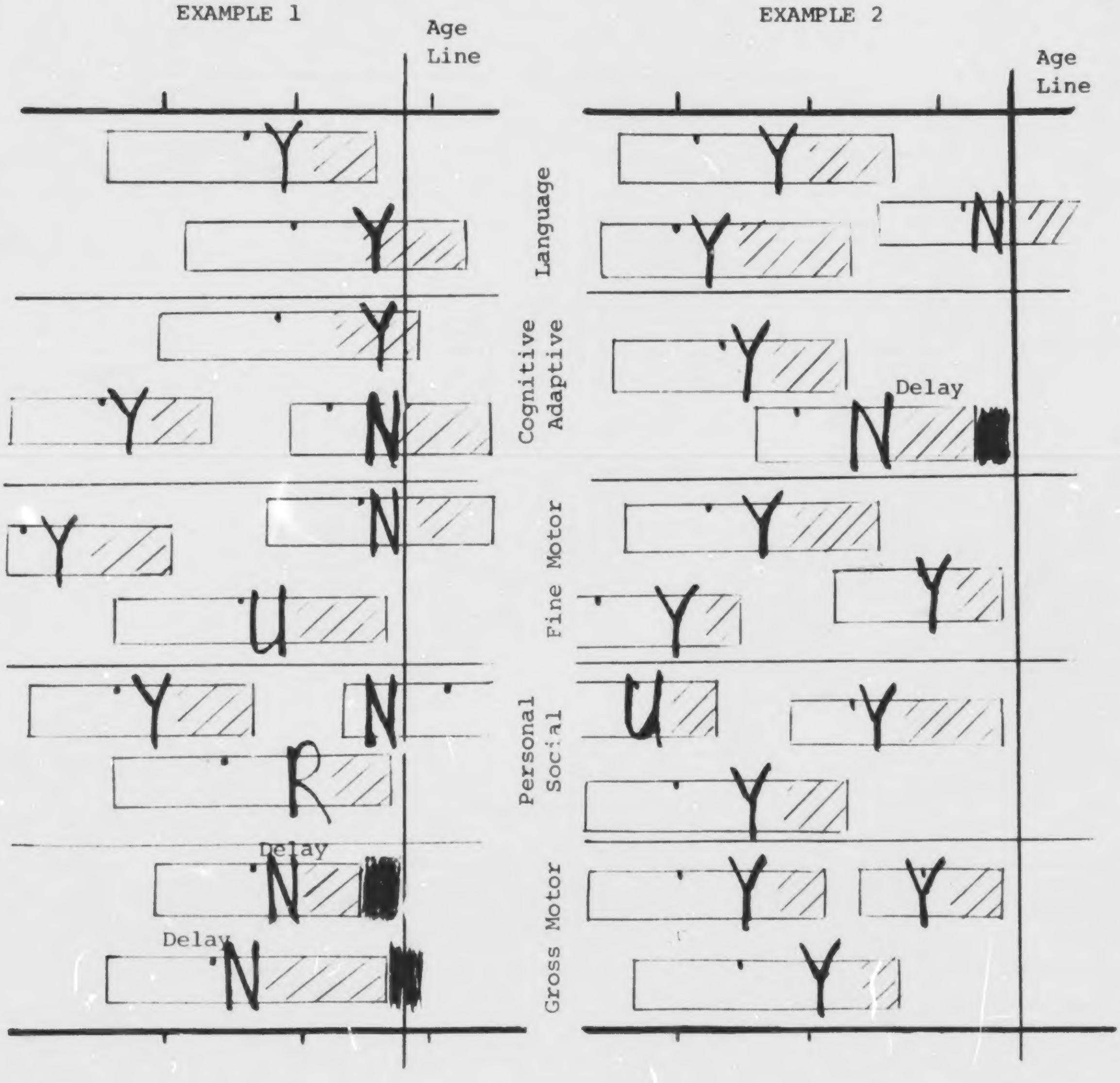
2. QUESTIONABLE.

Criteria.

1. There are 2 or more delays in 1 section

   or

2. There are 1 or more sections with 1 delay and no YES items intersected by the Age Line


EXAMPLE 1
Age Line
EXAMPLE 2
Age Line
Language
Cognitive Adaptive
Fine Motor
Personal Social
Gross Motor
Y
N
U
R
Delay

OVERALL INTERPRETATION.

Example 1 = QUESTIONABLE: Using Criteria 1 we find that 1 sections (Gross Motor) has 2 item delays.

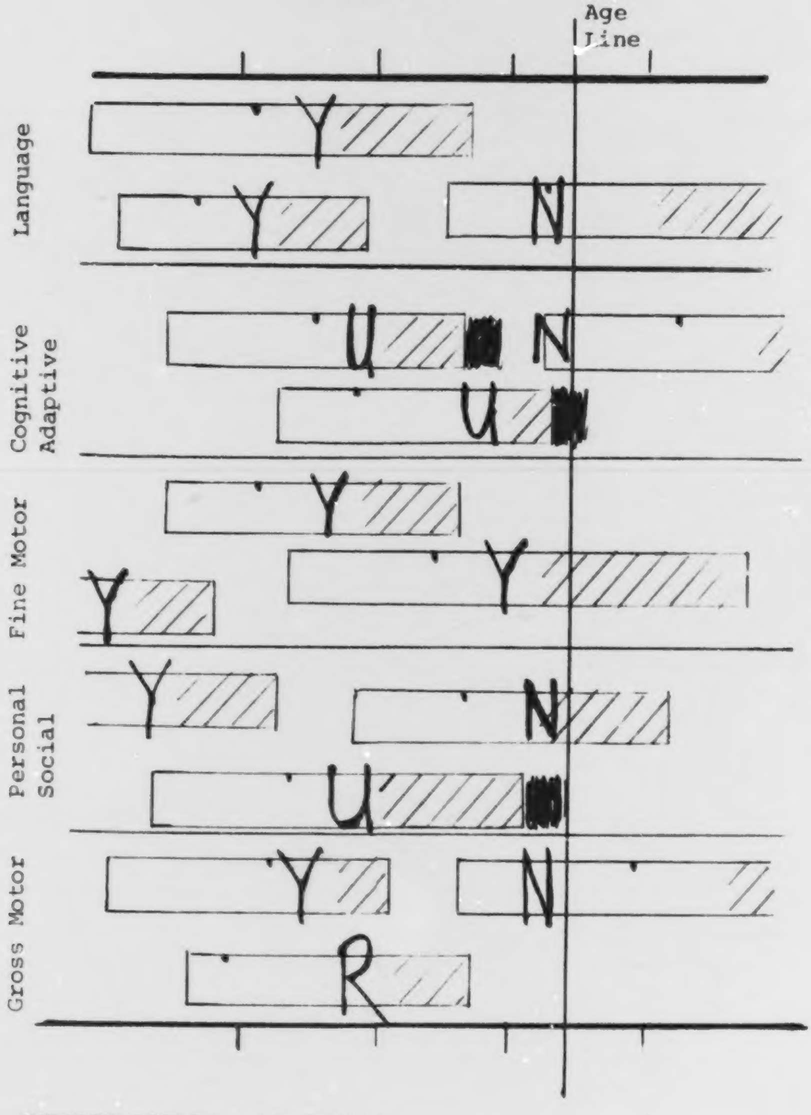
Example 2 = QUESTIONABLE: Using Criteria 2 there is one section (Cognitive Adaptive) that has 1 delay and no YES items crossing the Age Line.

3. NO RESULT.

Criteria.

If when any U (Unable to Judge) scores are converted to N and there are sufficient to change the overall interpretation from Satisfactory to Developmental Delay then an NR interpretation should be made.

EXAMPLE


Age Line
Language
Y
Y
N
Cognitive Adaptive
U
N
U
Fine Motor
Y
Y
Y
Personal Social
Y
N
U
Gross Motor
Y
N
R

OVERALL INTERPRETATION = NO RESULT.

If U codes in Cognitive-Adaptive and Personal-Social were changed to N then the interpretation would be Developmental Delay according to Criteria 2 (see Interpretation of Results, 1. Developmental Delay).

Note: When a NO RESULT interpretation is obtained the child should be assessed again as soon as is possible (within two weeks) to obtain a definite judgement.

CHECKLIST FOR SCORING PROCEDURES

1. Work out the child's Age at Recording.

2. Carefully mark in the Age Line.

3. Look at the Behaviour Check List to see what behaviour items are to be considered for a child of the particular age group. In some cases you may need to consider two Check Lists.

4. Make sure that you are completely familiar with the detailed description of each behaviour item being considered.

5. Observe the child's behaviour and record appropriately.
Note: Items may also be completed from your knowledge of the child, by report from another observer (who knows the child well), or by introducing an activity during a "normal" play or activity session.

6. Record your observations by using this code.

    Y for Yes (Observed by you).
    R for Yes (Reported by another observer).
    N for No (Definitely cannot perform a particular behaviour).
    U for Unable to judge (No opportunity to observer, judge or obtain report from another observer or cannot judge accurately).

7. Make sure that in each section there are 3 items marked Y or R before (to the left) of the Age Line.

8. Ensure that all items crossed by the Age Line have been marked.

9. Keep checking items to the right of the Age Line until there are 3 items marked N (No) in each section. (This may not be possible for older children).

10. Locate any ITEM DELAYS.

11. Note the number of ITEM DELAYS (i.e. items marked "N" which are found to the left of the Age Line) in each section.

12. Apply the Interpretation of Results criteria.

13. Initiate appropriate follow up action (see RESCREENING and REFERRAL on next page).

RESCREENING AND REFERRAL

1. RESCREENING

If there is any doubt at all about the results obtained by a child who has been checked out on the Developmental Record, if a rating of Developmental Delay, Questionable or No Result is made then the child should be reassessed within the following two to three weeks.

During this time those people who are involved with the child should pay particular attention to his behaviour and in particular to those behaviours which form part of the Developmental Record assessment. When the reassessment is carried out it is suggested that the same Record form is used (perhaps use a different coloured pen) and that an attempt is made to make fairly detailed written comments. This will be particularly useful if it is decided to refer the child for more detailed diagnostic assessment.

2. REFERRAL

If after reassessment the child's performance is still judged as Developmental Delay or Questionable then the child's parents should be contacted for discussion about the situation with a view to recommending that the child be referred to a specialist for further evaluation. The nature of this "specialization" will vary according to the indication from the Record of the area of developmental lag.

It must be remembered at all times that it is the parents' prerogative to agree or not to this referral and the discussion must be conducted with understanding, diplomacy, and tact. The child must not be immediately labelled, the Developmental Record is at best a coarse grained screen or indicator of possible developmental lag, it is not a refined diagnostic tool.

The parental contact and discussion and the ensuing referral process will obviously vary with the nature of the program, the policy laid down by the committee of management or Departmental director and the particular policy and procedure established by the director or head of the "school" or centre. In any situation however it must be remembered that the expressed wishes of the parents and their child and common human dignity must be respected.

ITEM DESCRIPTIONS

LANGUAGE

1. Laughs, chuckles. (100% by 3 months).
   Produces some pleasure sound either spontaneously or as reaction to adult's actions, speaking, playing etc.

2. Makes several sounds in one breath.
   Sounds run together, need not be distinct or make sense.

3. Plays at making sounds when alone.
   Any voice sounds apart from whimpering, crying.

4. Turns at mention of own name.
   Pass if child turns in the direction of a voice.

5. Makes distinct, separate sounds.
   With voice e.g. "muh", "da" or any distinct separate voice sound, even though it might not sound like a word you know.

6. Two syllable babbling.
   Puts two separate sounds together, could be repetition, e.g. "ga-ga"

7. Imitates coughs, sounds etc. (33%).
   Will copy and repeat some sounds that you make or that he has heard e.g. a cough, grunting, clicking tongue etc.

8. Some words besides "Mama" and "Dada".
   Score yes even if not complete or exact words. Meaning may be clear to you only. Words do not have to be understandable by all but must mean the same whenever they are used.

9. [illegible] play copies outdoor sounds.
   Could be indoors sounds as well e.g.'s animals, car, egg beater, t.v. character, electric shaver.

10. Fetch familiar object if asked. (35%).
    Will get something for you if you ask.

11. Responds, reacts to simple phrases.
    e.g. "all-gone", "going to bed", "no" (see also #9).

12. Demands by pointing and vocalizing. (33%).
    To show he wants something, points or makes some gesture and makes some sound or a word.

13. Vocalizes, points to show adults. (33%).
    To show objects etc. to others. Makes some sound and some pointing or indication.

14. Two word phrases, 2 concepts.
    Uses two or more words together in meaningful phrases. Must be two separate "ideas" e.g. "shut door", "daddy gone", "want milk". Phrases like "bye bye", "all gone" do not pass.

15. Names familiar objects.
    Spontaneously or if asked. e.g. animals, pets, t.v. characters, toys, "household" objects. Words to be reasonably recognizable by somebody not familiar with the child's speech.

16. Joins in nursery rhymes, so[illegible]
    Doesn't have to know whole verse; knows some parts and joins in with these.

17. Uses 3 word sentences.
    e.g. "put baby sock", "daddy gone work". Not necessary to be like adult sentences.

18. Tries to tell about what he is doing.
    Tells spontaneously or in response to question e.g. in drawing, play etc. while it is going on.

19. Converses in sentences. (20%).
    Needs to be conversation in which there are at least two exchanges between the adult and the child.

20. Uses "same" and "different" correctly.
    Child indicates he knows that some things are the same and others are different and uses these words.

21. Uses plurals of nouns, pronouns. (33%).
    e.g. "they", "we", "us", "dogs", "trees", "children" etc.
    Score yes even though may not always be "correct" e.g. "mouses".

22. Asks names of things.
    Asks "whats that?" or uses similar questions.

23. Speech easily understood by strangers.
    You may need to ask about this from a person who does not know the child very well.

24. Uses "and" to join phrases etc. into continuous speech. (33%).
    Not just using "and" to string single words together.

25. Sings songs rhymes etc.
    Sings or says songs, nursery rhymes, T.V. ads etc.
    At least a 2 to 3 line sequence or a full sentence.

26. Tells well known story.
    Tells all the important parts of the story from memory without the use of appropriate picture sequence.

27. Gives reasons/explanations to elaborate experiences. (33%).
    When asked is able to relate an event, or something that has happened recently using elaborations to help someone else understand what he has said.

28. Describes, not just names, what is happening in drawings.
    Action described may be fairly straightforward.

29. Names, recognizes five colours.
    May have to be helped by saying "show me the ----- one".

30. Tells jokes, riddles.
    Even if riddle or joke is nonsensical or not funny score yes if intention is reasonably clear.

COGNITIVE-ADAPTIVE

31. Watches face. (100% by 3 months).
When a face comes close will regard it intently.

32. Turns head to voice. (100% by 3 months).
Child turns to sound of his name if it is spoken by somebody he does not see. (May need repetition).

33. Looks for object, not in correct place.
Must have been playing with object and dropped it. Starts looking but not in right place.

34. Holds, looks at, shakes rattle. (50% by 3 months).
Needs to look at and shake, not just hold the rattle.

35. Bangs objects when playing. (33% by 3 months).
Deliberately makes a noise e.g. bangs hand or toy on table or floor.

36. Recognizes familiar people. (50% by 3 months).
Smiles, reaches for.

37. Drops objects as game, to watch.
Drops objects when seated in highchair, or in crib etc. so that somebody will pick it up. Shows signs of playfulness, pleasure etc.

38. Looks for objects if seen dropped or hidden.
Searches in or looks at correct place. Must have seen or been playing with object and have seen it being hidden, or watched it being dropped.

39. Hits together objects held in hand.
With intent, makes noise.

40. Holds out and releases objects to others.
Will usually give up, release an object to you when you ask.

41. Searches for toy even if not seen hidden.
During a game or similar activity will start to look for an object which he has lost or which has been hidden by somebody else even though he has not seen the object being hidden.

42. Points to if asked.
If asked "where is ----" or "point to ----" some object or a particular person he will point to this person or object.
Could also include going to.

43. Remembers where some objects belong. (30%).
Knows where some things belong when asked or when putting things away.

44. Identifies familiar things from T.V. (30%).
Not on T.V. at the time but later e.g. pictures of characters, toys, games, etc.

45. Knows names of playmates.
Is not necessary for him to be able to say names, as long as he knows them e.g. if he indicates correctly when you ask.

46. Makes dolls do things/act out in play.
Makes doll, teddy bear etc. do things e.g. eat, sleep, drink, play games; "tells off" or scolds, talks to it.

47. Imitates action at a later date. (33%).
    Sometimes will imitate or copy something he has seen or done previously e.g. some game, a real life incident, an incident in a story etc. T.V.

48. Uses objects in pretending play. (35%).
    Uses objects e.g. blocks of wood, jars, bits and pieces even other toys etc. when playing to pretend that these are something else.

49. Asks questions.
    Is curious about the world around him, asks some questions.

50. Recalls events from recent past.
    Tells you about things that happened earlier in the day or even a few days previously (either without prompting or if asked).

51. Make believe play - 15 minutes.
    Engages in simple make believe play: pretends he is an adult, plays houses, does dad's work, pretends to drive car, feeds and puts doll to bed etc.

52. Names, talks about what he has drawn.
    Must be talking about his drawing, not simply naming contents.

53. Understands concept of three, can select three objects.
    e.g. "Show me three blocks, three biscuits etc." (not just counting to 3 by rote).

54. Sometimes tries to count.
    Indicates awareness of "one more". Counts two objects evidently not merely as rote recitation. Knows how many up to 2.

55. Plays with small representational toys.
    Child plays make believe with dolls, toy animals etc.

56. Makes things out of odds and ends.
    Child makes things out of odds and ends.

57. Draws or copies a square.
    Produces or reproduces geometric square design with approximately right angle corners and about equal sides with crayon, pencil or pen on paper or suitable surface (paper, slate etc.). May originate such a design with or without copy or as part of another drawing e.g. house or box.

58. Understands concept of five, selects five objects.
    e.g. "Show me five blocks, five biscuits etc. (not just counting to 5 by rote).

59. Pictures recognizable as houses, people etc. (33%).
    Even though picture or drawing may be very simple it should be recognizable.

60. Draws human figure, at least six parts.
    Note; 2 eyes = 1 part, 2 legs = 1 part etc.

61. Drawing of head includes five parts.
    Eyes, nose, mouth, ears, hair, eyebrows, teeth.

FINE MOTOR

62. Turns head to watch movement. (100% by 3 months).
   Especially following tracking a moving object e.g. person toy, hanging mobile, if this movement is not too rapid.

63. Turns head to sound. (100% by 3 months).
   May need to be repeated fairly close to child.

64. Grasps feet.
   Not necessarily both feet at same time.

65. Transfers object hand to hand. (15% at 3 months).
   Can pass an object from one hand to another, intentionally not just by chance.

66. Holds object each hand same time.
   Can hold two objects, one in each hand, at same time.

67. Pokes finger into holes, at objects. (35%).
   Only small holes, cracks etc. and/or poking at objects.

68. Helps hold bottle, cup when drinking. (50%).
   Takes a reasonably firm grasp, may even hold bottle himself.

69. Holds out toys but does not release. (35%).
   Holds out toy etc. as though to give to another, but does not release.

70. Pincer grasp evident.
   Using thumb and forefinger can pick up small objects e.g. crumb, raisin, pea, corn kernel.

71. Removes, replaces lids. (50%).
   When playing with jars, bottles, boxes etc. can take off and replace lid though not necessarily perfectly (especially screw tops).

72. Builds two block tower. (20%).
   Places one block on top of another and top block will stay when he takes hand away.

73. Builds three block tower. (20%).
   As for #72 with three blocks.

4 Spontaneous scribbling with pencil.
   Pass if child makes two or more purposeful markings on a piece of paper. (Fail accidental marks or stabbing with the pencil).

75. Unwraps small objects. (50%).
   e.g. Toffees, lolly etc.

76. Builds four block tower.
   As for #72 with four blocks.

77. Able to draw vertical line.
   Pass if the child makes one line or more on the paper at least 1" long and not varying from the vertical line by more than 30°, lines do not have to be perfectly straight.

78. Pours water from jug without spilling.
   Some little spilling is allowed but jug must be reasonably sized and not a small toy.

79. Builds six block tower. (50%).
    As for #72 with six blocks.

80. Assembles simple puzzles, toys.
    e.g. Simple jigsaws, form boards, puzzle boards or assembling simple construction toy or kit etc.

81. Holds pencil/crayon in hand not fist. (33%).
    May be a variety of "grips". Score yes except for fist grip.

82. Builds seven or eight block tower.
    As for #72 with 7 or 8 blocks.

83. Builds nine or ten block tower. (40%).
    As for #72 with 9 or 10 blocks.

84. Buttons shirt, blouse, coat correctly. (33%).
    Needs to get button in correct buttonhole on most occasions.

85. Prints first name. (Only 50% achieve this by 60 months).
    Must be the child's own production, not simply copying but need not be perfect.

PERSONAL SOCIAL

86. Smiles at people. (100% by 3 months).

87. Crying stopped by voice/picked up. (100% by 3 months).
Crying quietened by being picked up and/or by soothing voice sounds.

88. Laughs at games.
Smiles and laughs when you play game with him e.g. making faces, playing "boo".

89. Feeds self rusk/biscuit. (50% at 3 months).
Likely to be messy.

90. Distinguishes strangers; cries, frowns, clings.
Gives some indication that he distinguishes strangers from known people; usually by some form of moderate anxiety, negative emotional display or distress. e.g. becomes quiet, withdraws, frowns, clings, whimpers, cries etc.

91. Stops activity when name called.
Not simply turning to sound of voice, but actually stops activity (may only stop briefly).

92. Insists on, tries doing things for self. (20%).
Insists on attempting to do things for self but need not be successful in actually carrying it out. (Often seen with attempts to feed self.)

93. Responds briefly to "no".
Child stops activity momentarily or longer.

94. Plays "peek-a-boo"/"pat-a-cake".
Pass if child plays "pat-a-cake" bringing own hands or arms together. If "peek-a-boo" pass if child looks in direction where adult's face appeared before hiding his (adult's) face again.

95. Tries to help with dressing. (50%).
Helps by holding out arms, legs at appropriate times.

96. Demonstrates affection to adults. (50%).
Usually to parent but may also be to other adults. By hugging, kissing, putting head forward to kiss.

97. Indicates "no" by some gesture. (50%).
Shows that he doesn't want to do something e.g. by shaking head, withdrawing or some other gesture. (May also say "no" but this is not necessary to pass).

98. Defends self when taken advantage of.
e.g. If pushed over or hit. (see also #101).

99. Can take off shoes and socks.
May do this without undoing laces etc.

100. Waves 'goodbye'. (50%).
Waves goodbye of own accord.

101. Reveals sense of ownership, defends possessions.
Recognizes "own" possessions, will defend these if similar age child tries to take them. These possessions may be only temporary as in nursery or playroom.

102. Tries to join in play of others but does not actually play with them.
Child may not make a truly social contact but will play alongside others (parallel play).

103. Asks for help - "I can't do it".
Asks for help with some personal needs, (such as washing hands, going to the toilet, etc.).

104. Shows affection for other children.
Child shows affection to other children and/or siblings e.g. by giving a hug, kiss or by some other action or words.

105. Can wash and dry face and hands. (35%).
Pass if the child can do all parts of the 2 tasks without help, except turning on taps that are out of his reach. Hands should be almost completely free of soap almost completely dry to pass.

106. Sometimes joins in what others are doing. (20%).
Particularly in unstructured play e.g. dressing up, sandpit play, etc. Could be joining in with one other, or a gorup. Note emphasis of "sometimes".

107. Recognizes others as boys/girls accurately.
May need to be asked, prompted.

108. Gives directions to other children. (50%).
Can tell other children what to do when playing or in games is able to give instructions, directions.

109. Gives full name; first and last both accurately.
Names should be clearly recognizable.

110. Amuses self up to one hour.
Child plays quietly by him/her self. May engage in a number of different activities or repeat activities during that time.

111. Can comb and brush hair.
Combs or brushes own hair reasonably well without help.

112. Can sometimes take turns. (50%).
Can "take it in turns" with other children if they need to share something. Plays games in which he takes turns with other children e.g. hide and seek, chasing, cops and robbers.

113. Engages in cooperative play.
Plays in coordinated group (pairs, trios, more) observing rules or maintaining purpose with harmonious give and take.

114. Gets ready for bed without help. (33%).
Changes clothes for pyjamas; may not do everything perfectly but usually completes most of the task.

GROSS MOTOR

115. Rolls over stomach to back. (50% at 3 months).
Pass if child rolls over completely, not just to or from his side (and not accidently).

116. Pulls to sit if hands held. (35% at 3 months).
If you hold his hands when he is lying on his back in front of you he can (but not always) pull self to sitting position.

117. On tummy, lifts chest, holds well.
When lying on stomach can lift head and chest and with arms in front can hold self up for some little time (not just momentarily).

118. Sits, back and head unsupported. (33% at 3 months).
Needs to be placed in sitting position first.

119. Rolls over, back to stomach.
Pass if child rolls over completely, not just to or from his side, (and not accidently).

120. If held under arms makes stepping movements.
Feet need to touch some surface.

121. When sitting turns to get object.
Can "swivel" around in a seated position to retrieve an object.

122. Pulls to stand using furniture. (30%).
Can pull self up into standing position using furniture, other objects.

123. Stands up without help.
Child succeeds in getting up to a standing position without any upright support to pull himself up.

124. Walks with hand held.
Can walk but needs one hand held to steady him.

125. Scoots around on wheeled toy. (20%).
Sits in or on toy and pushes with feet. Some children may only go backwards.

126. Walks well. (20%).
Is past the early staggering stage. May have the occasional fall but usually because he trips over toys etc.

127. Pushes, pulls large objects.
Pushes and pulls large objects e.g. chair, around the floor.

128. Climbs on playground and other equipment.
May not be very high but some climbing involved.

129. Runs smoothly, turns, stops quickly with ease.
Runs well, turns sharp corners easily, keeps good balance, can stop suddenly without difficulty.

130. Jumps on spot with both feet.
Both feet lift off ground together.

131. Kicks large ball.
Brings leg back to kick, doesn't need to hold on to anything for support.

132. Manoeuvres large toys round corners.
Child can get trolley, cart, pram or some other toy on wheels around corners and other obstacles.

133. Rides tricycle using pedals.
Can stop, manoeuvre and change direction easily.

134. Can take off clothes if no difficult fastenings.
Removes simple articles of clothing e.g. pants, shirt, shoes and socks.

135. Balances on one leg. (35%).
Stands in place on one leg, eyes open, maintaining equilibrium without undue body movements and without support of object, person etc.

136. Can sit on floor cross-legged.

137. Hops on one foot: on spot or travels.
For some distance or for some time, about ten hops.

138. Makes out of door constructions with large materials, boxes etc.
Also forts, cubby houses etc. with chairs, blankets, boxes etc.

139. Dresses and undresses without help.
Unfastens and removes and/or replaces and fastens most of own garments without help or undue delay. Need not tie laces.

BEHAVIOUR CHECK LISTS

Select and use the appropriate Behaviour Check List as a guide to the behaviour items to be observed as part of the developmental assessment.

You may have to select two Check Lists for some children depending on the need to obtain an overlap of behaviours.

Once you have gained experience in the use of the Developmental Record for Infants and Young Children you may not have to use the Check Lists at all.

BEHAVIOUR CHECKLIST 1.

0 - 6 MONTHS

LANGUAGE

1. LAUGHS, CHUCKLES
2. MAKES SEVERAL SOUNDS IN ONE BREATH
3. PLAYS AT MAKING SOUNDS WHEN ALONE
4. TURNS AT MENTION OF OWN NAME
5. MAKES DISTINCT SEPARATE SOUNDS
6. SYLLABLE BABBLING (TWO SYLLABLES)
7. IMITATES COUGHS, SOUNDS, ETC.

COGNITIVE-ADAPTIVE

31. WATCHES FACE
32. TURNS HEAD TO VOICE
33. LOOKS FOR OBJECTS NOT IN RIGHT PLACE
34. HOLDS, LOOKS AT, SHAKES RATTLE
35. BANGS OBJECTS WHEN PLAYING
36. RECOGNISES FAMILIAR PEOPLE
37. DROPS OBJECTS AS GAME/TO WATCH
38. LOOKS FOR OBJECTS IF SEEN DROPPED/HIDDEN

FINE MOTOR

62. TURNS HEAD TO WATCH MOVEMENT
63. TURNS HEAD TO SOUND
64. GRASPS FEET
65. TRANSFERS OBJECT HAND TO HAND
66. HOLDS OBJECT EACH HAND SAME TIME
67. POKES FINGERS INTO HOLES/AT OBJECTS
68. HELPS HOLD BOTTLE/CUP WHEN DRINKING
69. HOLDS OUT TOYS BUT DOES NOT RELEASE

PERSONAL-SOCIAL

86. SMILES AT PEOPLE
87. CRYING STOPPED BY VOICE/PICKED UP
88. LAUGHS AT GAMES
89. FEEDS SELF RUSK/BISCUIT
90. DISTINGUISHES STRANGERS; CRIES, FROWNS, CLINGS
91. STOPS ACTIVITY WHEN NAME CALLED
92. INSISTS ON/TRIES DOING THINGS FOR SELF

GROSS MOTOR

115. ROLLS OVER, STOMACH TO BACK
116. PULLS TO SIT IF HANDS HELD
117. ON TUMMY LIFTS CHEST HOLDS WELL
118. SITS, BACK & HEAD UNSUPPORTED
119. ROLLS OVER, BACK TO STOMACH
120. IF HELD UNDER ARMS, MAKES STEPPING MOVEMENTS

BEHAVIOUR CHECKLIST 2.

5 - 10 MONTHS

LANGUAGE

6. SYLLABLE BABBLING (TWO SYLLABLES)
7. IMITATES COUGHS, SOUNDS, ETC.
8. SOME WORDS BESIDES "MAMA" & "DADA"
11. RESPONDS, REACTS TO SIMPLE PHRASES
12. DEMANDS BY POINTING AND VOCALIZING

COGNITIVE-ADAPTIVE

37. DROPS OBJECTS AS GAME/TO WATCH
38. LOOKS FOR OBJECTS IF SEEN DROPPED, HIDDEN
39. HITS TOGETHER OBJECTS IN HAND
40. HOLDS OUT/RELEASES OBJECTS TO OTHERS
41. SEARCHES FOR TOY EVEN IF NOT SEEN HIDDEN
42. POINTS TO IF ASKED

FINE MOTOR

68. HELPS HOLD BOTTLE/CUP WHEN DRINKING
69. HOLDS OUT TOYS BUT DOES NOT RELEASE
70. PINCER GRASP EVIDENT

PERSONAL-SOCIAL

91. STOPS ACTIVITY WHEN NAME CALLED
92. INSISTS ON/TRIES DOING THINGS FOR SELF
93. RESPONDS BRIEFLY TO "NO"
94. PLAYS "PEEK-A-BOO" & "PAT-A-CAKE"
95. TRIES TO HELP WITH DRESSING

GROSS MOTOR

119. ROLLS OVER BACK TO STOMACH
120. IF HELD UNDER ARMS MAKES STEPPING MOVEMENTS
121. SITTING, TURNS TO GET OBJECT
122. PULLS TO STAND USING FURNITURE

BEHAVIOUR CHECKLIST 3.

8 - 16 MONTHS

LANGUAGE

8. SOME WORDS BESIDES "MAMA" & "DADA"
9. IN PLAY COPIES OUTDOOR SOUNDS
10. FETCHES FAMILIAR OBJECTS IF ASKED
11. RESPONDS/REACTS TO SIMPLE PHRASES
12. DEMANDS BY POINTING AND VOCALIZING
13. VOCALIZES/POINTS TO SHOW ADULTS

COGNITIVE-ADAPTIVE

40. HOLDS OUT/RELEASES OBJECTS TO OTHERS
41. SEARCHES FOR TOY EVEN IF NOT SEEN HIDDEN
42. POINTS TO IF ASKED
43. REMEMBERS WHERE SOME OBJECTS BELONG
44. IDENTIFIES FAMILIAR THINGS FROM T.V.
45. KNOWS NAMES OF PLAYMATES

FINE MOTOR

70. PINCER GRASP EVIDENT
71. REMOVES/REPLACES LIDS
72. BUILDS 2-BLOCK TOWER
73. BUILDS 3-BLOCK TOWER
74. SPONTANEOUS SCRIBBLING WITH PENCIL

PERSONAL-SOCIAL

96. DEMONSTRATES AFFECTION TO ADULTS
97. INDICATES "NO" BY SOME GESTURE
98. DEFENDS SELF WHEN TAKEN ADVANTAGE OF
99. CAN TAKE OFF SHOES AND SOCKS
100. WAVES GOODBYE

GROSS MOTOR

120. IF HELD UNDER ARMS MAKES STEPPING MOVEMENTS
121. SITTING, TURNS TO GET OBJECT
122. PULLS TO STAND USING FURNITURE
123. STANDS UP WITHOUT HELP
124. WALKS IF HAND HELD
125. SCOOTS AROUND ON WHEELED TOY
126. WALKS WELL
127. PUSHES/PULLS LARGE OBJECTS
128. CLIMBS ON PLAYGROUND AND OTHER EQUIPMENT

BEHAVIOUR CHECKLIST 4.

14 - 20 MONTHS

LANGUAGE

9. IN PLAY COPIES OUTDOOR SOUNDS
10. FETCH FAMILIAR OBJECTS IF ASKED
12. DEMANDS BY POINTING AND VOCALIZING
13. VOCALIZES/POINTS TO SHOW ADULTS
14. TWO-WORD PHRASES/TWO CONCEPTS (NOT "MA-MA", BUT "GET BALL")
15. NAMES FAMILIAR OBJECTS
16. JOINS IN NURSERY RHYMES/SONGS
17. USES THREE-WORD SENTENCES

COGNITIVE-ADAPTIVE

43. REMEMBERS WHERE SOME OBJECTS BELONG
44. IDENTIFIES FAMILIAR THINGS FROM T.V.
45. KNOWS NAMES OF PLAYMATES
46. MAKES DOLLS DO THINGS/ACT OUT IN PLAY
47. IMITATES ACTION AT A LATER DATE

FINE MOTOR

72. BUILDS 2-BLOCK TOWER
73. BUILDS 3-BLOCK TOWER
74. SPONTANEOUS SCRIBBLING WITH PENCIL
75. UNWRAPS SMALL OBJECTS
76. BUILDS 4-BLOCK TOWER
77. ABLE TO DRAW VERTICAL LINE

PERSONAL-SOCIAL

98. DEFENDS SELF WHEN TAKEN ADVANTAGE OF
99. CAN TAKE OFF SHOES AND SOCKS
100. WAVES GOODBYE
101. REVEALS SENSE OF OWNERSHIP/DEFENDS POSSESSIONS
102. TRIES TO JOIN IN PLAY OF OTHERS, BUT DOES NOT ACTUALLY PLAY WITH THEM

GROSS MOTOR

125. SCOOTS AROUND ON WHEELED TOY
126. WALKS WELL
127. PUSHES/PULLS LARGE OBJECTS
128. CLIMBS ON PLAYGROUND AND OTHER EQUIPMENT
129. RUNS SMOOTHLY, TURNS, STOPS QUICKLY WITH EASE
130. JUMPS ON SPOT WITH BOTH FEET
131. KICKS LARGE BALL

BEHAVIOUR CHECKLIST 5.

18 - 24 MONTHS

LANGUAGE

16. JOINS IN NURSERY RHYMES, SONGS
17. USES 3-WORD SENTENCES
18. TRIES TO TELL ABOUT WHAT HE IS DOING

COGNITIVE-ADAPTIVE

46. MAKES DOLLS DO THINGS/ACT OUT IN PLAY
47. IMITATES ACTION AT LATER DATE
48. USES OBJECTS IN PRETENDING PLAY
49. ASKS QUESTIONS
50. RECALLS EVENTS FROM RECENT PAST

FINE MOTOR

75. UNWRAPS SMALL OBJECTS
76. BUILDS 4-BLOCK TOWER
77. ABLE TO DRAW VERTICAL LINE
78. POURS WATER FROM JUG WITHOUT SPILLING
79. BUILDS 6-BLOCK TOWER

PERSONAL-SOCIAL

98. DEFENDS SELF WHEN TAKEN ADVANTAGE OF
99. CAN TAKE OFF SHOES AND SOCKS
100. WAVES GOODBYE
101. REVEALS SENSE OF OWNERSHIP, DEFENDS POSSESSIONS
102. TRIES TO JOIN IN PLAY OF OTHERS BUT DOES NOT ACTUALLY PLAY WITH THEM
103. ASKS FOR HELP "I CAN'T DO IT"
104. SHOWS AFFECTION TO OTHER CHILDREN

GROSS MOTOR

128. CLIMBS ON PLAYGROUND AND OTHER EQUIPMENT
129. RUNS SMOOTHLY, TURNS, STOPS QUICKLY WITH EASE
130. JUMPS ON SPOT WITH BOTH FEET
131. KICKS LARGE BALL
132. MANOEUVRES LARGE TOYS AROUND CORNERS

BEHAVIOUR CHECKLIST 6.

22 - 28 MONTHS

LANGUAGE	17.	USES 3-WORD SENTENCES
	18.	TRIES TO TELL ABOUT WHAT HE IS DOING
	19.	CONVERSES IN SENTENCES
	20.	USES "SAME/DIFFERENT" CORRECTLY
	21.	USES PLURALS OF NOUNS/PRONOUNS
	22.	ASKS NAMES OF THINGS
COGNITIVE-ADAPTIVE	46.	MAKES DOLLS DO THINGS/ACT OUT IN PLAY
	47.	IMITATES ACTION AT LATER DATE
	48.	USES OBJECTS IN PRETENDING PLAY
	49.	ASKS QUESTIONS
	50.	RECALLS EVENTS FROM RECENT PAST
	51.	MAKE-BELIEVE PLAY - 15 mins
	52.	NAMES/TALKS ABOUT WHAT HE HAS DRAWN
FINE MOTOR	77.	ABLE TO DRAW VERTICAL LINE
	78.	POURS WATER FROM JUG WITHOUT SPILLING
	79.	BUILDS 6-BLOCK TOWER
	80.	ASSEMBLES SIMPLE PUZZLES/TOYS
	81.	HOLDS PENCIL/CRAYON IN HAND NOT FIST
	82.	BUILDS 7-8 BLOCK TOWER
	83.	BUILDS 9-10 BLOCK TOWER
PERSONAL-SOCIAL	101.	REVEALS SENSE OF OWNERSHIP, DEFENDS POSSESSIONS
	102.	TRIES TO JOIN IN PLAY OF OTHERS BUT DOES NOT ACTUALLY PLAY WITH THEM
	103.	ASKS FOR HELP "I CAN'T DO IT"
	104.	SHOWS AFFECTION TO OTHER CHILDREN
	105.	CAN WASH AND DRY FACE AND HANDS
	106.	RECOGNISES OTHERS AS BOYS/GIRLS ACCURATELY
GROSS MOTOR	129.	RUNS SMOOTHLY, TURNS, STOPS QUICKLY WITH EASE
	130.	JUMPS ON SPOT WITH BOTH FEET
	131.	KICKS LARGE BALL
	132.	MANOEUVRES LARGE TOYS AROUND CORNERS
	133.	RIDES TRICYCLE USING PEDALS
	134.	CAN TAKE OFF CLOTHES IF NOT DIFFICULT FASTENINGS
	135.	BALANCES ON ONE LEG

BEHAVIOUR CHECKLIST 7.

26 - 36 MONTHS

LANGUAGE

19. CONVERSES IN SENTENCES
20. USES "SAME/DIFFERENT" CORRECTLY
21. USES PLURALS OF NOUNS/PRONOUNS
22. ASKS NAMES OF THINGS
23. SPEECH EASILY UNDERSTOOD BY STRANGERS
24. USES "AND" TO JOIN PHRASES, ETC. - CONTINUOUS SPEECH
25. SINGS SONGS, RHYMES, ETC.

COGNITIVE-ADAPTIVE

48. USES OBJECTS IN PRETENDING PLAY
49. ASKS QUESTIONS
50. RECALLS EVENTS FROM RECENT PAST
51. MAKE BELIEVE PLAY - 15 mins
52. NAMES, TALKS ABOUT WHAT HE HAS DRAWN
53. UNDERSTANDS CONCEPTS OF 3, SELECTS 3 OBJECTS
54. SOMETIMES TRIES TO COUNT
55. PLAYS WITH SMALL REPRESENTATIONAL TOYS

FINE MOTOR

79. BUILDS 6-BLOCK TOWER
80. ASSEMBLES SIMPLE PUZZLES/TOYS
81. HOLDS PENCIL/CRAYON IN HAND NOT FIST
82. BUILDS 7-8 BLOCK TOWER
83. BUILDS 9-10 BLOCK TOWER

PERSONAL-SOCIAL

103. ASKS FOR HELP "I CAN'TO DO IT"
104. SHOWS AFFECTION TO OTHER CHILDREN
105. CAN WASH AND DRY FACE AND HANDS
106. SOMETIMES JOINS IN WHAT OTHERS ARE DOING
107. RECOGNIZES OTHERS AS BOYS/GIRLS ACCURATELY
108. GIVES DIRECTIONS TO OTHER CHILDREN
109. GIVES FULL NAME, FIRST AND LAST, ACCURATELY
110. AMUSES SELF UP TO ONE HOUR

GROSS MOTOR

132. MANOEUVRES LARGE TOYS AROUND CORNERS
133. RIDES TRICYCLE USING PEDALS
134. CAN TAKE OFF CLOTHES IF NO DIFFICULT FASTENINGS
135. BALANCES ON ONE LEG
136. CAN SIT ON FLOOR CROSS-LEGGED

BEHAVIOUR CHECKLIST 8.

34 - 46 MONTHS

LANGUAGE

23. SPEECH EASILY UNDERSTOOD BY STRANGERS
24. USES "AND" TO JOIN PHRASES ETC. - CONTINUOUS SPEECH
25. SINGS SONGS, RHYMES, ETC.
26. TELLS WELL-KNOWN STORY
27. GIVES REASONS, EXPLANATIONS TO ELABORATE EXPERIENCES
28. DESCRIBES, NOT JUST NAMES, WHAT IS HAPPENING IN DRAWINGS
29. NAMES, RECOGNIZES 5 COLOURS

COGNITIVE-ADAPTIVE

53. UNDERSTANDS CONCEPTS OF 3 - SELECTS 3 OBJECTS
54. SOMETIMES TRIES TO COUNT
55. PLAYS WITH SMALL REPRESENTATIONAL TOYS
56. MAKES THINGS OUT OF ODDS AND ENDS
57. DRAWS/COPIES A SQUARE
58. UNDERSTANDS CONCEPTS OF 5 - SELECTS 5 OBJECTS
59. PICTURES RECOGNIZABLE AS PEOPLE, HOUSES, ETC.

FINE MOTOR

82. BUILDS 7-8 BLOCK TOWER
83. BUILDS 9-10 BLOCK TOWER
84. BUTTONS SHIRT, BLOUSE, COAT CORRECTLY

PERSONAL-SOCIAL

106. SOMETIMES JOINS IN WITH WHAT OTHERS ARE DOING
107. RECOGNIZES OTHERS AS BOYS/GIRLS ACCURATELY
108. GIVES DIRECTIONS TO OTHER CHILDREN
109. GIVES FULL NAME, FIRST AND LAST, ACCURATELY
110. AMUSES SELF UP TO ONE HOUR
111. CAN COMB AND BRUSH HAIR
112. CAN SOMETIMES TAKE TURNS
113. ENGAGES IN CO-OPERATIVE PLAY
114. GETS READY FOR BED WITHOUT HELP

GROSS MOTOR

133. RIDES TRICYCLE USING PEDALS
134. CAN TAKE OFF CLOTHES IF NO DIFFICULT FASTENINGS
135. BALANCES ON ONE LEG
136. CAN SIT ON FLOOR CROSS-LEGGED
137. HOPS ON ONE FOOT, ON SPOT OR TRAVELS
138. MAKES OUT-OF-DOOR CONSTRUCTIONS WITH LARGE MATERIALS, BOXES, ETC.
139. DRESSES AND UNDRESSES WITHOUT HELP

BEHAVIOUR CHECKLIST 9.

44 - 60 MONTHS

LANGUAGE

26. TELLS WELL-KNOWN STORY
27. GIVES REASONS, EXPLANATIONS TO ELABORATE EXPERIENCES
28. DESCRIBES, NOT JUST NAMES, WHAT IS HAPPENING IN DRAWINGS
29. NAMES, RECOGNIZES 5 COLOURS
30. TELLS JOKES, RIDDLES

COGNITIVE-ADAPTIVE

56. MAKES THINGS OUT OF ODDS AND ENDS
57. DRAWS/COPIES A SQUARE
58. UNDERSTANDS CONCEPT OF 5 - SELECTS 5 OBJECTS
59. PICTURES RECOGNIZABLE AS PEOPLE, HOUSES, ETC.
60. DRAWS HUMAN FIGURE AT LEAST 6 PARTS
61. DRAWING OF HEAD INCLUDES 5 PARTS (EYES, EARS, NOSE, ETC.)

FINE MOTOR

83. BUILDS 9-10 BLOCK TOWERS
84. BUTTONS SHIRT, BLOUSE, COAT CORRECTLY
85. PRINTS FIRST NAME

PERSONAL-SOCIAL

113. ENGAGES IN CO-OPERATIVE PLAY
114. GETS READY FOR BED WITHOUT HELP

GROSS MOTOR

137. HOPS ON ONE FOOT: ON SPOT OR TRAVELS
138. MAKES OUT-OF-DOOR CONSTRUCTIONS WITH LARGE MATERIALS, BOXES, ETC.
139. DRESSES AND UNDRESSES WITHOUT HELP

APPENDIX 1.

ITEMS SELECTED FOR STANDARDIZATION

NOTE: Number following each item indicates approximate placement in months.

1. Watches face. (1)
2. Smiles at people. (1)
3. Watches a moving object. (1)
4. Turns eyes toward light and sound. (1)
5. When crying quietened by familiar friendly voice or being picked up. (1)
6. Gives attention to voices e.g. stops whimpering when spoken to and/or turns head towards person talking or singing. (2)
7. Vocalizes other than crying e.g. pleasure noises, comfort noises. (1)
8. Strong cry - "crows", beginning to laugh, chuckles and gurgles. (3)
9. Vocalizes when spoken to or when appears pleased. (3)
10. Large, jerky limb movements, arms more active. (1)
11. Kicks vigorously, legs alternating or occasionally together. (3)
12. Head lag moderate. (3)
13. Head lag slight. (4)
14. No head lag. (5)
15. When lying on stomach can lift head with arms in front for support. (3)
16. When lying on stomach lifts chest as well as head. (4)
17. Lifts chest, holds for long period. (6)
18. Will grab and pull adult's finger. (3)
19. Effort to sit. (4)
20. When lying on back raises head from pillow. (6)
21. Sits with support and holds head erect and steady for several seconds. (3)
22. Sits unsupported. (6)
23. Fingers own hands in play and watches; clasps and unclasps. (3) (Appears to be intentional in clasping hands rather than this occurring merely by accident.)
24. When awake and content hands usually held loosely open. (5)

25. Reacts in familiar situations; reacts in anticipation e.g. increasing activity, rapid breathing, vocalizing, or brightening facial expression when an adult is starting to lift him/her, to feed or to put a napking on. (3)

26. Holds rattle momentarily but can't look at it. (3)

27. Looks at, and shakes rattle when placed in hand. (4)

28. Reaches for nearby objects e.g. rattle. (4)

29. Picks up small toys. (3)

30. Puts toys and other objects in mouth. (4)

31. Bangs in play. (5) Bangs toys together or against a table etc., bangs hands on something.

32. Appears interested in sound production. Plays at making sounds when alone. (5) The child intentionally uses objects to make noises.

33. Splashes. (5)

34. Usually responds and shows pleasure by laughing or squealing when played with or tickled or when stomach is rubbed by head. (3)

35. Often laughs during play with objects. (4)

36. Not fearful of strangers. (6)

37. Grasps feet with hands. (6)

38. Rolls from stomach to back. (4)

39. Rolls from back to stomach and from stomach to back. (6)

40. Babbles several sounds in one breath inarticulately. (6)

41. Vocalizes at people and inanimate objects; not recognisable words but uses different tones of voice. (6)

42. Vocalizes distinct, separate sounds like "da", "ga", "ba", "ma", "ka", "muh", "goo". (7)

43. 2 syllable babbling "da-da" etc... (7) These syllables are not necessarily intended by the child as meaningful words, but simply occur in vocal play.

44. May resist the unfamiliar. (6)

45. Greater tendency to fearfulness of strange situations. There might be particular situations e.g. vacuum cleaner. (8) The child might startle, look around wide-eyed or otherwise plainly show fearful awareness that he is in a strange place.

46. Indicates recognition of familiar persons e.g. reaching for. (6)

47. Distinguishes strangers. May cling to a familiar person to hide face. (9) (Or child may have a questionning look, stare, frown or cry).

48. Shows anxiety if approached by strangers, needs reassurance from familiar adult. (12)

49. Apt to be shy with strangers. (13)

50. Turns at mention of own name. (6)

51. Stops activity when name is called. (8)

52. Often transfers objects from hand to hand. (6)

53. Holds 2 objects at the same time; 1 in each hand. (7)

54. Spontaneously hits objects together. (9)

55. Picks up small objects, crumbs etc. between thumb and forefinger. (9)

56. Holds toys etc. out but cannot yet give. (9)

57. Releases objects into adult hand. (12)

58. Stands if held under arms. (6)

59. Makes stepping movements when supported under arms. (8)

60. Makes stepping movements when both hands held. (9)

61. Pulls self upright. (6)

62. Pulls self to standing position, using furniture. (8)

63. Sidesteps around cot holding on to rails. (10)

64. Stands alone. (9)

65. Stands up without help. (15)

66. Crawls. with abdomen on or off the ground or shuffles around on buttocks. (9)

67. Repeats performance when laughed at. (5)

68. Laughs or smiles if known adult plays peek-a-boo (or other game). (6)

69. Plays peek-a-boo, pat-a-cake or a similar game. (8) N.B. active participation, not just a smile or laugh.

70. Pokes finger into holes and at small objects. (8)

71. Inspects things; grasps and pulls at them. (9)

72. When he drops a toy he does not look for it. (5)

73. Looks for fallen toy but not necessarily in the right place. (6)

74. Looks for fallen or hidden objects if seen fall or hidden. (9)

75. Begins to search for hidden objects when not seen hidden. (12)

76. Drops toys deliberately as a game or to watch them fall. (11)

77. Likes repetitive play, the same actions over and over again. (12)

78. Usually vocalizes in varied jargon pattern while playing. (11)

79. Imitates coughs, grunts, clicks etc. (10)

80. Copies clapping hands. (10)

81. Waves goodbye. (9)

82. Responds at least momentarily to inhibitory "no". (9)

83. Reacts to simple phrases, "all-gone", "no-no". (11)

84. Feeds self rusk or biscuit. (7)

85. Helps to hold cup or bottle when feeding. (10)

86. Insists on attempting to do things for self e.g. feeding. (12)

87. Helps with dressing by holding out arms and legs. (12)

88. Uses some gesture language e.g. arms up to be picked up. (9) (The child may reach out, push away, or turn away to indicate his wants.)

89. Demands desired objects and simple needs by pointing accompanied by loud, urgent vocalization or single words. (18)

90. Vocalizes or points index finger to objects he/she wants or is interested in. (12)

91. When sitting can turn around and pick up objects. (12)

92. Makes coordinated attempts to reach objects, and attacks barriers. (12)

93. Walks with one hand held. (12)

94. Walks unsteadily with feet wide apart but is frequently stopped by falling or bumping into furniture. (13)

95. Walks well. (15)

96. Climbs on to step. (13)

97. Climbs into adult chair and seats self. (15)

98. Crawls up stairs. (15)

99. Walks up a set of stairs with help. (16)

100. Walks down stairs with help. (16)

101. Mobile exploratory behaviour inside and outside buildings e.g. might explore cupboards inside. (14)

102. Shows preference to use one hand more than the other to do things. (13)

103. Turns pages usually 2 or 3 at a time. (12)

104. Turns pages of a book singly. (23)

105. Builds tower of 2 or more blocks. (13) (A cube should not be counted unless the child releases it, and it remains balanced on top of a single cube.)

106. Can build a tower of 3 blocks. (16)

107. Shows off shoes, clothing and toys. (14)

108. Upon request gives up toys but may immediately want them back. (15)

109. Fetches familiar objects on request. (16)

110. Points to familiar persons and objects when asked to so do. (15)

111. Plays alone i.e. not with other children. (12 - 24)

112. Some true words (other than "mamma". "dadda") appear in jargon utterances. (14) (Note any words the child applies appropriately to a specific objects or situation. Approximations are O.K. as long as their intent is clear. Even if the words used are markedly different from the regular word in the language, but are still regularly understood - responded to by others they should be counted as true words (REEL)

113. Hums or sings. (17)

114. Sometimes refuses and is unwilling to do things you want him/her to do. (15)

115. Indicates "no" by shaking head or some other gesture. (14)

116. Demonstrates affection for parent or other adult (note who) for example by kissing and hugging. (17)

117. Defends self when taken advantage of. (17)

118. Removes and replaces lids on containers e.g. on jars and bottles. (17)

119. Spontaneous scribbling with pencil. (18)

120. Is able to draw a verticle line. (19) (see Gesell)

121. Draws vertical and horizontal lines. (24)

122. Draws circles. (24) (sample possible?) May be part of other drawing.

123. Catches and throws largs ball crudely. (18)

124. Throws a ball 3' in the direction he wants. (24)

125. Pushes and pulls large objects around floor. (18)

126. Rides or scoots around on a wheeled toy e.g. tricycle (though still unable to use pedals). (18)

127. Remembers where some objects belong. (18)

128. Can take shoes and socks off. (18)

129. Occasional and brief temper tantrums. (18)

130. Temper tantrums when frustrated but attention easily distracted. (24)

131. In play imitates environmental sounds e.g. cars, animals. (20)

132. Uses 2 word phrases and short sentences. (18) i.e. 2 words signifying 2 concepts together, such as "shut door", "Daddy gone" etc. ("all gone", "bye-bye" are not credited)

133. Uses 3 word sentences e.g. "me go bed", "mummy go shopping". (24)

134. Watches other children at play without trying to participate. (18 - 24)

135. Definite preference for one hand. (24)

136. Climbs on playground equipment. (20)

137. Jumps on the spot, (both feet). (23)

138. Rises from squatting without using hands. (24)

139. Climbs on furniture for a purpose e.g. to look out window or to open door etc. (24)

140. Walks up stairs unassisted. (21)

141. Walks down stairs unassisted. (23)

142. Can build a tower of 4 or more blocks. (17)

143. Builds tower of 6 blocks. (23)

144. Identifies familiar things seen on T.V. (22)

145. Knows names of playmates. (22)

146. Names familiar objects. (24)

147. Talks to himself while playing. (24)

148. Joins in nursery rhymes and/or songs. (24)

149. Imitates own or another's actions at a later date e.g. pretends to be asleep or to eat or to wash etc. (22)

150. Uses objects pretending they are other things e.g. pretends a stick is a boat or a car etc. (24)

151. Makes a doll or a teddy bear do some things e.g. eat, sleep, drink etc. Might scold dolls or animals. (26)

152. Shows active interest or curiosity in toys, things or persons for a few minutes or longer. (23)

153. Reveals sense of ownership, recognizes "his"; defends possessions. (24)

154. Unwraps small objects e.g. takes wrapping off sweets. (24)

155. Threads beads e.g. large wooden beads on to a shoe lace or threading string. (24) (ask if opportunity to do this).

156. Asks to go to the toilet in good time. (24)

157. Tries to join in the play of other children. (24 - 30)

158. Plays alongside other children but doesn't actually play with them. (2 - 3 years)

159. Makes or builds things with other children. (26)

160. Asks for help, "I can't do it" (27)

161. Stands on tip-toes. (30) and walks on tiptoe for 10 steps.

162. Runs smoothly, turning sharp corners and stopping suddenly with ease. (28)

163. Rides tricycle using pedals. (30)

164. Does forward somersault. (30)

165. Kicks a large ball. (30)

166. Is usually friendly toward strangers but only after a little shyness. (39)

167. Usually responds to known adults in a friendly manner. (39)

168. Can pour water from a jug without spilling. (29)

NOTE: Items 185 and 186 were duplicated as Items 169 and 170.

171. Enjoys stories. (30)

172. Domestic make-believe play for about 15 minute periods, e.g. playing house, pretending to drive a car etc. (30)

173. Sentence repetition : echolia. (30)

174. Tells own name. (30)

175. Gives full name. (36)

176. Refers to other children as boys and girls correctly. (30)

177. Refers to self as boy or girl correctly. (27)

178. Asks questions. (30)

179. Asks questions beginning with "who". (32)

180. Asks questions beginning with or including "why", "when", "how". (34)

181. Takes part in conversations. (30)

182. Compares size and uses size words often and correctly. (30)

183. Holds pencils or crayon in hand, not fist. (30)

184. Uses more than one colour. (30)

185. Builds tower of 7 or 8 blocks. (30)

186. Builds tower 9 - 10 blocks. (36)

187. Keeps time to music by clapping, dancing etc. (30)

188. Makes excuses (not to be confused with lying). (32)

189. "Tells on" other children. (31)

190. Teases other children. (32)

191. Tries to tell about things (s)he is doing. (31)

192. Tells what happened in the recent past. (32)

193. Names and talks about what he/she has drawn. (33)

194. Initiates activities involving others. (32)

195. Gives directions to other children. (35)

196. Has a favourite playmate. (35)

197. Expresses feelings in words e.g. says he/she feels "sad", "bad", "mad", "happy", ...(35)

198. Puts together a simple jig-saw puzzle of 3 or more pieces, (34) or assembles simple parts of toys, not requiring much mechanical skill.

199. Can wash and dry face and hands. (35)

200. Can take off clothes without any supervision (if no difficult fastenings). (39)

201. Tries to sing or say nursery rhymes, pop songs or T.V. commercials etc. (35)

202. Can manoeuvre large toys around corners and obstacles. (35)

203. Likes to help with adult activities e.g. setting the table (36)

204. Shows some affection for younger children and/or siblings. (36)

205. Uses plural of nouns and pronouns. (36) N.B. the 's' may sound different if the child comes from a different cultural or language background.

206. Is aware of similarities and differences; uses "same" and "different". (36)

207. Balances on one leg. (36)

208. Has started to use knife and fork. (37)

209. Sometimes plays with small representational toys such as farm animals, zoo animals, or doll's house, in make believe games. (38)

210. Shows that he wants to know the names of things by asking "What's that?" or using other similar words. (38)

211. Plays in coordinated groups observing rules or maintaining purpose with harmonious give and take or in competition. (36)

212. Sometimes joins in and does what other children in a group are doing. (39)

213. Asks meaning of words. (41)

214. Carries on a simple conversation. (39)

215. Converses in sentences. (42)

216. Counts 3 or 4 things. (42) i.e. not rote counting.

217. Sometimes solitary quiet play for about 30 minutes. (42)

218. Swings, pumping self. (43)

219. Hops on one foot (43) for about 10'. N.B. BSOD states for at least 2 hops but this was at 30m.

220. Beginnings of dramatic play e.g. plays familiar roles, acts simple stories. (44)

221. Performs for others e.g. dresses up, or acts out nursery rhymes. (45)

222. Can sit on the floor cross legged. (45)

223. Usually friendly with other children. (44)

224. Usually plays with other children with little squabbling. (45)

225. Sometimes tries to count things while playing. (45)

226. Usually likes to do things for self but if in difficulty accepts help. (46)

227. Speech easily understood by strangers. (45)

228. Uses "and" to join phrases or sentences into continuous speech. (46)

229. Uses the words "today", "yesterday" and "tomorrow" correctly. (47)

230. Draws or paints, pictures easily recognisable as people, houses, animals etc. (47) (if possible collect specimens).

231. Spontaneously draws a person with head and legs. (46)

232. Spontaneously draws person with head, including eyes, nose, mouth, ears, hair (4 passes) Specify what....

233. Can describe what is happening in a picture, rather than just name the objects. (48)

234. Prints first name (48 - 60)

235. Capable of running errands, or taking messages to neighbours or to a local shop. (43)

236. Understands the concept of temperature. (48 - 60)

237. Understands the concept of weight. (48 - 60)

238. Understands the concept of distance. (48 - 60)

239. Constructive out of doors building with any large material at hand. (48)

240. Understands taking turns. (48)

241. Amuses self for up to 1 hour. (48 - 60)

242. Anticipates trips. Not upset by change in routine. (48 - 60)

243. Recognizes colours. (49)

244. Goes to toilet by self during the night. (50)

245. Goes about the neighborhood unattended. (51)

246. Counts 5 things not rote. (52)

247. Uses money. (52)

248. Makes things out of odds and ends. (52)

249. Shows pride in accomplishments or products. (48 - 60)

250. Can comb and brush hair. (53)

251. Buttons shirt, blouse, or coat correctly. (54)

252. Dress and undresses without help. (55)

253. Gets ready for bed without help. (55)

254. Draws or copies a square. (54)

255. Draws or copies a cross. (54)

256. Moulds. (54)

257. Tells what he dreams about. (55)

258. Tells a well-known story. (55 - 66)

259. Sometimes shows he appreciates how others feel. (55 - 66)

260. Starting to give reasons and explanations to elaborate own experiences to others. (55 - 66).

261. Asks questions about his own body. (55 - 66)

262. Uses a key. (55 - 66)

263. Uses a knife to spread. (55 - 66)

264. Can make a sandwich. (55 - 66)

265. Draws pictures which include more than one object. (56)

266. Draws a man, 6 parts. (57)

267. Colours within the lines in a colouring book. (56)

268. Tells jokes or riddles. (57)

269. Comprehends possible occurrences. (60)

270. Counts to 10. (60)

271. Names 5 colours. (60)

272. Skips. (60)

273. Cooperative play. (60)

APPENDIX 2.

NOTES ON METHOD OF SELECTION FOR CHILD DEVELOPMENT STUDY

The sample of 600 children aged between 0-4yrs is required for a proposed survey concerned with child development. The clustering sampling technique was used in order to reduce the spread of the sample. The first stage of the sampling process involved the selection of high fertility areas to reduce the number of dwellings required in order to obtain a sample of 600 children.

The sample was selected from suburbs which ranked above average with regard to fertility and familism. Fertility ranking is determined by the number of children between 0-4yrs old per 100 women. Familism is the proportion of married couples of child bearing age. These rankings were obtained from data held by Bob Stimson of Flinders University. He also provided data showing suburbs ranked according to socio-economic status which was determined primarily on the basis of occupation; these were classified into quintile groups. From each of these 5 groups, three suburbs already considered suitable according to the above criteria of high fertility and familism, were randomly selected. Using this method, a wide range of areas was obtained both geographically and in regard with socio-economic status.

The same number of dwellings was selected from each suburb and each socio-economic group. In order to obtain a truly representative sample the number of people sampled in each area should be proportional to the population of the area and of the population of each socio-economic group. This was not done because the initial selection process of only including high fertility areas precluded the sample from being truly representative of the A.S.D. or any other area in the first instance. Therefore it must be stressed that the results of this sample cannot be meaningfully "blown up" to provide any type of population estimate.

The second stage of the selection process involved the identification of Collectors Districts within each suburb. Individual "Blocks" were selected randomly from C.D.'s within each suburb to give the required number of dwellings. A list showing each selected suburb, the expected number of dwellings required to yield a sample of 40 children is attached below. For the purpose of this survey, it would be satisfactory to sample each dwelling within the selected blocks until the quota of 40 children in each suburb is reached. A surplus number of dwellings has been selected in area in case low fertility blocks are selected and to allow for non-response etc.

Block maps have been drawn up for each of the selected blocks. The area shaded in green forms the selected "blocks". The expected number of dwellings in each "block" is circled in green. Block boundaries must be strictly adhered to, as other blocks in each of these C.D.'s are currently being sampled by this office.

SELECTED BLOCKS IN SOCIO-ECONOMIC STATUS GROUP I

DIV.	SUB-DIV.	LGA	PART LGA	CD	BLOCK NO. (BUREAU REFERENCE)	NO. OF DWELLINGS AT LAST COUNT	LOCALITY
06	13	016	01	06	6	34	Eden Hills
06	13	016	01	02	1	47	Eden Hills
06	13	016	01	02	2	44	Eden Hills
07	12	016	07	05	1	33	Hawthorndene
07	12	016	07	06	4	46	Hawthorndene
07	12	016	07	08	8	32	Hawthorndene
05	01	030	01	03	1	74	Novar Gardens
05	01	030	01	03	2	23	Novar Gardens
05	01	030	01	03	8	36	Novar Gardens

SELECTED BLOCKS IN SOCIO-ECONOMIC STATUS GROUP 2

08	08	004	02	03	3	89	Athelstone
08	01	026	01	08	10	49	Banksia Park
08	01	026	01	05	16	38	Fairview Park
04	31	015	01	09	1	26	Happy Valley
04	31	015	01	09	2	32	Happy Valley
04	31	015	01	09	29	31	Happy Valley

SELECTED DWELLINGS IN SOCIO-ECONOMIC STATUS GROUP 3

DIV.	SUB-DIV.	LGA	PART LGA	CD	BLOCK NO. (BUREAU REFERENCE)	NO. OF DWELLINGS AT LAST COUNT	LOCALITY
12	10	024	04	01	1	30	Salisbury Plain
12	10	024	04	01	9	32	Salisbury Plain
12	10	024	04	01	15	33	Salisbury Plain
08	03	026	03	02	3	36	Modbury
08	03	026	03	04	4	35	Modbury
08	03	026	03	04	9	40	Modbury
10	16	032	04	02	6	58	Fulham Gardens
10	16	032	04	03	1	68	Fulham Gardens

SELECTED DWELLINGS IN SOCIO-ECONOMIC STATUS GROUP 4

12	12	024	06	03	3	34	Valley View
12	12	024	06	05	3	26	Valley View
12	14	008	10	11	1	33	Valley View
12	06	007	04	03	1	44	Elizabeth Vale
12	06	007	04	05	5	54	Elizabeth Vale
12	06	007	04	05	7	41	Elizabeth Vale
05	14	019	02	01	3	32	Christies Beach
05	14	019	02	03	7	43	Christies Beach
05	16	019	04	11	2	39	Christies Beach

SELECTED DWELLINGS IN SOCIO-ECONOMIC STATUS GROUP 5

11	02	021	01	07	2	64	Taperoo
11	02	021	01	07	7	56	Taperoo
12	13	024	07	05	2	42	Ingle Farm
12	13	024	07	07	1	33	Ingle Farm
12	02	018	02	01	4	32	Elizabeth West
12	02	018	02	03	2	53	Elizabeth West

SOCIO-ECONOMIC STATUS	SUBURB NO.	SUBURB NAME	NO. OF OCCUPIED DWELLINGS	NO. OF CHILDREN 0-4	NO. OF DWELLINGS REQUIRED
1	49	Eden Hills/Bellview Heights	2,439	938	104
1	55	Hawthorndene/Glenalta	1,522	777	78
1	70	Novar Gardens	850	328	104
2	38	Athelstone	1,542	892	69
2	118	Banksia Park/Fairview Park	1,751	1,031	68
2	124	Happy Valley	732	452	65
3	107	Salisbury Plain	2,094	1,116	75
3	120	Modbury	1,962	984	80
3	81	Fulham Gardens	2,091	941	99
4	109	Valley View	1,781	1,167	61
4	114	Elizabeth Vale	1,912	761	100
4	126	Christies Beach	1,773	891	80
5	89	Taperoo	1,825	741	99
5	110	Ingle Farm	2,258	1,531	59
5	115	Elizabeth West	1,423	925	62
				Total	1,220

ADDENDUM TO APPENDIX 2.

SUPPLEMENTARY POPULATION BLOCKS

During the course of the data collection for the norming study it became apparent that the required numbers of children in some population blocks would not be achieved without obtaining additional areas to sample. The interviewers checked each residence in their areas very thoroughly and only abandoned calling on a home after three visits. In this case the interviewer would leave a letter requesting assistance and asking the parent to telephone for an interview time. Interviewers also worked evenings and weekends in an attempt to exhaust all possibilities within their "blocks".

When all possible measures had been taken a further approach was made to the Bureau of Statistics who provided supplementary blocks in the following areas

Eden Hills
Athelstone
Modbury
Fulham Gardens

Nearly 100 successful interviews were conducted in these supplementary areas.

APPENDIX 3. STANDARDIZATION QUESTIONNAIRE

NAME: ______________________

AGE: ______________________

DRAWING: ______________________

SIBS: ______________________

Identification Number	C.1-3 ☐☐☐
Card Number	C.4 ☐
Address Code	C.5-10 ☐☐☐☐☐☐
S.E.S. Area	C.11 ☐
Interviewer Number	C.12 ☐
Date of Interview (MMDD)	C.13-16 ☐☐☐☐
Child's date of birth (YYMMDD)	C.17-22 ☐☐☐☐☐☐
Age at interview (MMW)	C.23-25 ☐☐☐
Child's Sex M = 1. F = 2.	C.26 ☐
Can you remember what -- weight when -- was born?	C.27-29 ☐☐☐
Has -- been admitted to hospital at any time since -- first came home? No. of days. 000 Less than one day 999 Not at all	C.30-32 ☐☐☐
Has -- had any serious illness or disability? If yes, specify, ...	C.33 ☐

GENERAL QUESTIONS

G.1 WHERE WERE YOU BORN?

1. Australia
2. Italy
3. Germany
4. Greece
5. Yugoslavia
6. Great Britain or Ireland
7. Poland, Baltic States, Russia
8. Spain, Malta, Cyprus
9. Other, specify ....

C.34 ☐

G.2 (IF NOT BORN IN AUSTRALIA) HOW MANY YEARS HAVE YOU BEEN IN AUSTRALIA? (Code completed years)

00 Less than one year
88 Born in Australia

C.35-36 ☐☐

G.3 WHAT IS YOUR AGE? (years last birthday)

C.37-38 ☐☐

G.4 ARE YOU PRESENTLY MARRIED, WIDOWED, DIVORCED, SEPARATED OR HAVE YOU NEVER BEEN MARRIED?

1. Presently married
2. Widowed
3. Divorced
4. Separated
5. Never married
6. Refused

C.39 ☐

G.5 WHAT IS YOUR HUSBAND'S OR CURRENT PARTNER'S AGE? (Years last birthday) (Circle Husband/Partner)

99 No partner

C.40-41 ☐☐

G.6 WHERE WAS HE BORN?

1. Australia
2. Italy
3. Germany
4. Greece
5. Yugoslavia
6. Great Britain or Ireland
7. Poland, Baltic States, Russia
8. Spain, Malta, Cyprus
9. Other, specify ....

C.42 ☐

G.7 HOW MANY YEARS HAS HE BEEN IN AUSTRALIA?

00 Less than one year
88 Born in Australia
99 No partner

C.43-44 ☐☐

G.8 (WHERE ONE PERSON NOT BORN IN EITHER AUSTRALIA, GREAT BRITAIN OR IRELAND) WHAT IS THE LANGUAGE USUALLY SPOKEN IN YOUR HOME?

1. English
2. Italian
3. German
4. Greek
6. Yugoslavian (Servian, Coration ..)
7. Other, specify ....
9. Not applicable

C.45 ☐

G.9 HOW MANY OTHER PEOPLE LIVE IN THIS HOUSE
(N.B. Does not include persons not considered part of the household)

	1.	2.	3.	
a.	Mother or mother-in-law		(both)	
b.	Father or father-in-law		(both)	
c.	Own children			
d.	Adopted or foster children or children of husband's previous marriage			(n)
e.	Other relatives			(n)
f.	Others			(n)

C.46-51

a. ☐
b. ☐
c. ☐
d. ☐
e. ☐
f. ☐

G.10 (IF G.9 - NO) ARE YOU IN REGULAR CONTACT WITH YOUR OWN MOTHER?

C.52 ☐

1. Yes
0. No
2. Mother dead
3. Mother resides away from Adelaide.
9. Not applicable

G.11 WHAT IS THE HIGHEST GRADE OF SCHOOLING YOU REACHED?

C.53 ☐

1. Primary only
2. Less than three full years secondary
3. Three or more years secondary but didn't matriculate.
4. Matriculated

G.12 HAVE YOU COMPLETED ANY FURTHER TRAINING OR STUDIES SINCE YOU LEFT SCHOOL? WHAT WAS THIS?

C.54 ☐

0. None
1. Secretarial/business
2. Apprenticeship/trade school
3. Nurse aide or equivalent
4. Technical course
5. Nursing sister
6. Teachers' College, University
7. Other, specify ....

G.13 DO YOU CURRENTLY HAVE ANY PAID EMPLOYMENT? OR UNPAID WORK IN A FAMILY BUSINESS? HOW MANY HOURS PER WEEK?

C.55-56 ☐☐

Specify nature
Code hours 00 None

G.14 WHAT WAS YOUR USUAL FULL TIME PAID EMPLOYMENT? (CODE LATER)

C.57 ☐

Specify .... 0 = Home

G.15 WHAT IS YOUR HUSBAND'S (PARTNER'S) OCCUPATION? (This refers to his present job and includes pensions and social service benefits) WHAT TRADE OR PROFESSIONAL QUALIFICATIONS DOES HE HAVE?

C.58 ☐

Specify occupation ....
Qualifications ....
What does this entail? ....

G.16 THIS QUESTION CONCERNS YOUR FAMILY INCOME PER WEEK, PLEASE LOOK AT THIS CARD AND LET ME KNOW WHICH ONE OF THESE CATEGORIES INCLUDES YOUR FAMILY'S WEEKLY INCOME AFTER TAX. (i.e., take-home pay, pensions etc., but not child endowment).

C.59-60 ☐☐

11. $40 or less
12. $41-$60
13. $61-$80
14. $81-$100
15. $101-$120
16. $121-$140
17. $141-$160
18. $161-$180
19. $181-$200
20. More than $200
88. Don't know
99. Refused

G.17 (IF WORKING MOTHER) WHO TAKES CARE OF THE CHILD(REN) WHILE YOU WORK?

C.61 ☐

1. Relative at mother's home
2. Relative at their home
3. Friend in mother's home
4. Friend in their home
5. Day care centre
6. Family day care
7. Other, specify ....
9. Inapplicable.

G.18 DOES -- HAVE ANY REGULAR CONTACT WITH OTHER CHILDREN IN ONE OF THESE:

C.62 ☐

0. No
1. Occasional day care
2. Family day care
3. Kindergarten - private
4. Kindergarten - Union
5. Education Dept. pre-school
6. Play group
7. Other, specify ....

* If a combination - specify major form.

G.19 IF IT WERE AVAILABLE LOCALLY, WOULD YOU MAKE USE OF ANY OF THE FOLLOWING:

C.63 ☐

0. No. Specify...............................
1. Permanent day care (full or part-time)
2. Occasional day care
3. Kindergarten
4. Education Dept. pre-school
5. Play group
6. Any other, specify ....
7. Combination, specify ....
9. Not applicable.

C.64-65
☐☐

G.20 HOW MANY BROTHERS AND SISTERS DOES -- HAVE?

C.66-80

What is the eldest called?
Sex and age in years (SAA)
1. Male
2. Female
Start with the eldest.
-00 less than one year
999 Not applicable

1. ☐☐☐
2. ☐☐☐
3. ☐☐☐
4. ☐☐☐
5. ☐☐☐

THERE ARE SOME SERVICES WHICH HELP MOTHERS WITH YOUNG CHILDREN, LIKE M.B.H.A. ARE THERE ENOUGH OF THESE. HAVE YOU ANY OTHER SUGGESTIONS?

JUST AS A GENERAL QUESTION: IS THERE ANYTHING ABOUT -- WHICH WORRIES YOU?

DO YOU HAVE ANY COMMENTS TO MAKE ABOUT THE INTERVIEW?

WOULD YOU LIKE TO KNOW ABOUT THE SURVEY WHEN ALL THE INFORMATION IS COLLECTED AND WORKED OUT? IT PROBABLY WON'T BE TILL EARLY NEXT YEAR.

NAME .... ADDRESS.................................

TO BE COMPLETED AFTER THE INTERVIEW

Where was the interview conducted?

Time of day: Starting time..............Finishing time..................

Length of interview ....mins.

Was anyone else present during the interview?

Yes, whom....................... Why ....
No.

Was the person interviewed: very friendly
fairly co-operative
suspicious
hostile

Was there any language problem: Yes/No

Were any questions not understood?

Yes, specify ....

No.

General comment about the interview:

Interviewer's signature..................................

NOTE: ITEMS SCORED AS FOLLOWS

1. YES
0. NO
2. NOT ALLOWED
3. NO OPPORTUNITY
8. DON'T KNOW
9. NOT APPLICABLE

CARD 2 STARTS.
DUPLICATE
COLS. 1-3
PUNCH 2 IN
COL. 4. PROCEED.

1.	HAVE YOU NOTICED -- WATCHING YOUR FACE, or another person's? SCORE: Yes	1	C.5 ☐
2.	WHAT ABOUT SMILING, DOES -- SMILE? SCORE: Smiles at people ASK	1	C.6 ☐
3.	DOES -- WATCH THINGS THAT MOVE? e.g. person, moving toy? SCORE: Moves head to watch ASK	1	C.7 ☐
4.	WHEN A LIGHT GOES ON, OR THERE IS A NOISE NEAR --, WHAT DOES -- DO? SCORE: Turns eyes/head to light/sound ASK	1	C.8 ☐
5.	IF -- IS CRYING WHAT WILL QUIETEN --? SCORE: "voice" or "picked up" ASK	1	C.9 ☐
6.	WHEN NOT CRYING HOW DOES -- REACT TO VOICE? SCORE: "turns head towards" ASK	2	C.10 ☐
7-9	DOES MAKE ANY OTHER NOISES APART FROM CRYING? SCORE: pleasure, comfort, satisfaction noises PROBE: Could you tell me about them When does -- make them Any others	1	C.11 ☐
	SCORE: Laugh, chuckle, gurgle PROBE: When does -- make these	3	C.12 ☐
	SCORE: "When he is spoken to" ASK	3	C.13 ☐
10-11	WHAT ABOUT ARM AND LEG MOVEMENTS? How are these SCORE: "Jerking" "not much control" etc.	1	C.14 ☐
	What about kicking SCORE: "Kicks a lot" etc.	3	C.15 ☐

12-14	DO YOU HAVE TO SUPPORT HEAD WHEN NURSING?		
	SCORE: Moderate/a lot	3	C.16 ☐
	SCORE: Slight/Not much	4	C.17 ☐
	SCORE: No	5	C.18 ☐
15-17	WHEN -- IS LYING ON -- STOMACH, WHAT DOES -- DO WITH -- HEAD?		
	SCORE: Can lift head, arms in front for support	3	C.19 ☐
	PROBE: Where are arms when -- lifts head PROBE: Does -- lift head only?		
	SCORE: Lifts chest holds short period	4	C.20 ☐
	SCORE: Lifts chest holds long period	5	C.21 ☐
18	WILL -- PLAY WITH YOUR FINGER? What does -- do?		
	SCORE: Grasp and pull	3	C.22 ☐
19-20	DOES -- TRY TO SIT UP AT ALL?		
	SCORE: Effort to sit by pulling up (see 17)	4	C.23 ☐
	SCORE: Raises head from pillow (no support)	6	C.24 ☐
21-22	IF YOU PUT-- IN THE SITTING POSITION CAN -- STAY IN IT? What happens to -- head?		
	SCORE: Sits with support	3	C.25 ☐
	PROBE: Support?		
	SCORE: Sits unsupported (back and head)	6	C.26 ☐
23	DOES -- PLAY WITH -- OWN HANDS?		
	SCORE: Touches and clasps own hands, watching	3	C.27 ☐
	PROBE: Does -- touch them at all? Does -- watch them? Do you think -- means to clasp -- hands or that it is accidental?		
24	HOW DOES -- HOLD -- HANDS WHEN -- IS AWAKE AND HAPPY?		
	SCORE: Usually open	5	C.28 ☐
	ASK - demonstrate		
25.	DOES -- SOMETIMES APPEAR TO KNOW WHAT'S GOING TO HAPPEN NEXT? EXAMPLE?		
	SCORE: Rapid breathing, increasing activity, vocalising or brightening of expression.	3	C.29 ☐
	PROBE: What about when you are going to feed -- or bath --, or pick -- up? What does -- do?		
26-27	WHAT DOES -- DO IF YOU PUT A RATTLE IN -- HAND?		
	SCORE: Holds momentarily (needn't look at).	3	C.30 ☐
	SCORE: Looks at and shakes	4	C.31 ☐

28-30 WHAT DOES -- DO WHEN THERE ARE SMALL OBJECTS NEAR -- e.g. block, rattle, ball, rag?
SCORE: Reaches for 4 C.32 ☐
PROBE: Does -- reach for them?
Anything else?
SCORE: Take, pick up 4 C.33 ☐
PROBE: What does do with them then
SCORE: Puts them in -- mouth 4 C.34 ☐
ASK

31-32 DOES -- BANG THINGS WHILE PLAYING?
PROBE: What does -- do?
SCORE: Bangs 5 C.35 ☐
PROBE: Does -- make noises using other things?
What about when -- is alone?
Does -- like making sounds, do you think.
SCORE: Plays at making sounds when alone. 5 C.36 ☐

33 IS IT EASY TO BATH --?
PROBE: Does -- play, wriggle, splash?
SCORE: Splashes 5 C.37 ☐

34-35 WHAT GAMES DO YOU PLAY WITH HIM?
PROBE: How does -- react to this?
What noises does -- make?
SCORE: Responds shows pleasure by laughing or squealing 3 C.38 ☐
PROBE: What about when -- plays with things.
Does -- laugh; a proper laugh?
SCORE: Often laughs when playing with objects. 4 C.39 ☐

36 IF SOMEBODY WHO IS STRANGE TO -- COMES NEAR OR PLAYS WITH -- WHAT HAPPENS?
SCORE: Not fearful 6 C.40 ☐
PROBE: Does -- cry, or is -- happy?

37 DOES -- PLAY WITH -- FEET?
PROBE: What does -- do?
Can -- grab -- feet with -- hands?
Does -- do this often?
Purposefully do you think?
SCORE: Grasps feet 6 C.41 ☐

38-39 CAN -- ROLL OVER?
PROBE: Which way? (explain)
SCORE: Stomach - back 4 C.42 ☐
SCORE: Both ways 6 C.43 ☐

40-43 WHEN BABIES PLAY WITH SOUNDS THEY MAKE WITH THEIR VOICE, IT IS CALLED BABBLING. WHEN -- BABBLES, WHAT SORT OF SOUNDS DOES -- MAKE?

PROBE: Does -- make a lot of sounds in one breath?

SCORE: Several sounds in one breath inarticulately — 6 — C.44 ☐

PROBE: What about -- tone of voice?
Does -- vary -- tone?
Does -- seem to babble at people or things?

SCORE: at people/objects, different tones — 6 — C.45 ☐

SCORE: Vocalizes distinct, separate sounds like "da", "muh" — 7 — C.46 ☐

PROBE: Does -- ever put two of these sounds together, like "ga-ga"

SCORE: 2-syllable babbling — 7 — C.47 ☐

44-45 WHAT DOES -- DO WHEN -- IS IN A STRANGE SITUATION? Like a strange room or house e.g. Doctors rooms, M.B.H.A. or Day Care Centres?

SCORE: May resist the unfamiliar — 6 — C.48 ☐

SCORE: Greater tendency to fearfulness (startle, wide-eyed etc.) — 8 — C.49 ☐

ASK:

46 WHAT DOES -- DO WHEN THERE IS SOMEBODY WHO IS NOT A STRANGER IS NEAR?

PROBE: Does -- appear to recognize them?
How does -- show this?

SCORE: Recognition (e.g. reaching for) — 6 — C.50 ☐

47-49 CHILDREN SEEM TO GO THROUGH DIFFERENT STAGES IN THE WAY THEY REACT TO STRANGERS. WHAT DOES -- DO WHEN -- IS WITH A STRANGER?

SCORE: Distinguishes strangers e.g. clings hides face, frowns, cries. — 9 — C.51 ☐

ASK

PROBE: If you reassure --, will -- put up with the stranger?

SCORE: Anxious, needs reassurance — 12 — C.52 ☐

SCORE: Tends to be shy — 13 — C.53 ☐

RECORD VERBATIM AS FAR AS POSSIBLE

50-51 WHAT DOES -- DO WHEN YOU CALL -- NAME?

SCORE: Turns — 6 — C.54 ☐

ASK

PROBE: What if -- is doing something and you call?

SCORE: Stops activity when name is called — 8 — C.55 ☐

52 CAN -- PASS AN OBJECT FROM ONE HAND TO THE OTHER?

PROBE: Have you seen -- do this often?
Do you think -- means to do it or do you think it is accidental?

SCORE: Often transfers — 6 — C.56 ☐

53 CAN -- HOLD TWO OBJECTS AT THE SAME TIME, ONE IN EACH HAND?
SCORE: Yes 7 C.57 ☐

54 DOES -- EVER HIT THESE TOGETHER?
SCORE: Yes 9 C.58 ☐

55 CAN -- PICK UP VERY SMALL THINGS LIKE A CRUMB, A RAISIN OR A COIN?
PROBE: How does -- do it?
What fingers does -- use?
SCORE: Pincer grasp 9 C.59 ☐

56-57 DOES -- SOMETIMES HOLD TOYS OUT TO YOU?
SCORE: Yes 9 C.60 ☐
PROBE: Can -- give them to you yet? (let them go)
SCORE: Releases 12 C.61 ☐

58-59 IF YOU HOLD -- UNDER THE ARMS AND LET -- FEET TOUCH THE GROUND, WHAT DOES -- DO WITH -- LEGS?
PROBE: Does -- take some of the weight on -- feet?
SCORE: Stands 6 C.62 ☐
PROBE: Does -- move -- legs like to walk?
SCORE: Stepping movements 8 C.63 ☐

60 WHAT ABOUT WHEN YOU JUST HOLD -- HANDS?
SCORE: Stepping movements when both held 9 C.64 ☐

61-62 IF YOU HOLD -- HANDS WHEN -- IS SITTING, WHAT DOES -- DO?
PROBE: Does -- pull on your hands?
Can -- pull -- self to sitting position?
SCORE: Pulls self upright to sitting 6 C.65 ☐
PROBE: What about to standing position?
Can -- pull -- self to standing using furniture?
SCORE: Pulls to standing using furniture 8 C.66 ☐

63 ONCE -- IS STANDING DOES -- MOVE AROUND AT ALL?
PROBE: How? Holding on to things?
SCORE: Sidesteps around with support 10 C.67 ☐

64 ONCE STANDING UP, CAN -- STAND WITHOUT HOLDING ON? HOW LONG?
SCORE: Once standing, stands with no support 9 C.68 ☐

65 CAN -- GET TO STAND UP WITHOUT HELP?
SCORE: Yes 15 C.69 ☐

66 ALTHOUGH -- DOESN'T WALK YET, CAN -- GET AROUND BY --SELF? HOW?
SCORE: Crawls, abdomen on/off ground or shuffles around on buttocks 9 C.70 ☐

67 IF YOU LAUGH AT SOMETHING -- IS DOING, WHAT DOES -- DO?
PROBE: Does -- seem pleased/excited?
Does -- ever repeat what -- was doing?
SCORE: Repeats performance if laughed at. 5 C.71 ☐

68-69 DO YOU PLAY GAMES WITH --?
PROBE: What sort?
What does -- do?
SCORE: Laughs/smiles at game (e.g. peek-a-boo) 6 C.72 ☐
PROBE: Does -- play too?
SCORE: Active participation 8 C.73 ☐

70 DOES -- POKE -- FINGER INTO HOLES?
PROBE: What about at small objects?
SCORE: Yes to both 8 C.74 ☐

71 DOES -- GRAB AND PULL THINGS?
PROBE: Why does -- do this, do you think?
Does -- seem to examine them?
SCORE: Inspects, grasp, pulls. 9 C.75 ☐

72-73 WHAT DOES -- DO WHEN -- DROPS A TOY OR SOMETHING?
PROBE: What does he do.
SCORE: Does not look 5 C.76 ☐
PROBE: Does -- look for it?
Does -- always look for it in the right place?
SCORE: Looks for fallen toy but not necessarily in the right place. 6 C.77 ☐

74-75 WHAT ABOUT IF YOU HIDE A TOY, AND -- SEES YOU HIDE IT? DOES -- LOOK FOR IT?
PROBE: In the right place?
SCORE: Looks for fallen/hidden objects if seen fall/hidden. 9 C.78 ☐
PROBE: What if -- didn't see where you hid it, does -- begin to search?
SCORE: Begins to search when not seen fall/hidden. 12 C.79 ☐

76 DOES -- SEEM TO DROP THINGS ON PURPOSE SOMETIMES?
PROBE: Why do you think -- does that?
SCORE: As a game/to watch them fall. 11 C.80 ☐

CARD 3 STARTS
DUPLICATE
COLS. 1-3
PUNCH 3 IN
COL 4 PROCEED.

77 WHAT (OTHER) SORTS OF GAMES DOES -- LIKE?
PROBE: Does -- like to do the same things. over and over again?
SCORE: Likes repetitive play 12 C.5 ☐

78 WHEN -- IS PLAYING DOES -- MAKE ANY SOUNDS?
PROBE: What do they sound like?
Does -- make monotonous sounds or is it quite varied?
SCORE: Vocalizes in varied jargon pattern while playing 11 C.6 ☐

79 DOES -- EVER COPY ANY SOUND YOU MAKE OR SAY? WHAT?
PROBE IF NO: Even something like a cough, grunt or you clicking your tongue
SCORE: Imitates coughs, grunts, clicks etc. 10 C.7 ☐

80 APART FROM THE SOUNDS, DOES -- COPY ANYTHING ELSE YOU DO? ANY ACTIONS?
PROBE: Does -- copy you clapping your hands?
SCORE: Copies clapping hands or other motion, specify .... 10 C.8 ☐

81 DOES -- WAVE GOODBYE?
PROBE: Is this always copying someone else waving?
Does -- wave goodbye on -- own
SCORE: Waves goodbye (own accord) 9 C.9 ☐

82 DO YOU THINK -- UNDERSTANDS WHEN YOU SAY "NO"?
PROBE: What does -- do?
(if, "stops"): Most children at this age stop only for a little while.
Does -- stop for long or does -- go back to what -- was doing after a moment?
SCORE: Responds at least momentarily 9 C.10 ☐

83 WHAT OTHER WORDS DOES -- SEEM TO REACT TO?
PROBE: What about with two words?
Does -- react to things like "all-gone"?
SCORE: Reacts to simple phrases. 11 C.11 ☐

84-85 DOES -- FEED --SELF AT ALL?
SCORE: Feeds self rusk or biscuit 7 C.12 ☐
PROBE: Does -- help hold the bottle (or cup) when -- is drinking?
SCORE: Yes 10 C.13 ☐

86 DOES -- TRY TO FEED --SELF WITH A SPOON?
PROBE: What other things are there that -- tries to do?
Does -- really insist on it?
SCORE: Insists on attempting to do things for self e.g. feeding. 12 C.14 ☐

87 DOES -- TRY TO HELP YOU WHEN -- IS BEING DRESSED?
PROBE (IF YES): What does -- do?
(IF NO): Does -- hold -- arms and legs out at the appropriate times?
SCORE: Helps by holding out arms and legs. 12 C.15 ☐

88-89 HOW DOES -- SHOW YOU WHAT -- WANTS?

PROBE: For example, what does -- do when -- wants a drink?

SCORE: Gesture language 9 C.16 ☐

PROBE: Does -- ever point at what -- wants? Does -- make any sounds or use any words to indicate what -- wants?

SCORE: Demands by pointing with loud, urgent vocalizations or single words. 18 C.17 ☐

90 WHAT ABOUT WHEN -- WANTS TO SHOW YOU SOMETHING -- IS INTERESTED IN?

SCORE: Vocalizes or points index finger to objects. 12 C.18 ☐

91 WHEN -- IS SITTING DOWN, WHAT DOES -- DO WHEN -- WANTS SOMETHING BEHIND --?

PROBE: Can -- get it? What does -- do?

SCORE: Turns around. 12 C.19 ☐

92 WHAT DOES -- DO WHEN -- WANTS SOMETHING THAT IS JUST OUT OF -- REACH?

PROBE: What if there is something in -- way? e.g. pillow, chair.

SCORE: Makes coordinated attempts to reach attacks barriers. 12 C.20 ☐

93-95 HOW WELL DOES -- WALK?

PROBE: Does -- need to hold onto your hand?

SCORE: Walks with one hand held. 12 C.21 ☐

PROBE: (IF WALKS ALONE) Are -- feet wide apart?
Does -- fall over often?
Does -- bump into things

SCORE: Walks unsteadily with feet wide apart but is frequently stopped by falling or bumping into furniture. 13 C.22 ☐

SCORE: Walks well. 15 C.23 ☐

96-100 HOW DOES -- GO WITH GETTING ONTO A STEP, DO YOU NEED TO LIFT -- UP?

SCORE: Climbs, crawls onto a step 13 C.24 ☐

PROBE: (IF YES) Does -- ever crawl up or climb onto an adult chair to sit down?

SCORE: Yes 15 C.25 ☐

PROBE: What about for a set of stairs?

SCORE: Yes 15 C.26 ☐

PROBE: What about walking up a set of stairs? Do you need to help?

SCORE: Walks up set of stairs with help. 16 C.27 ☐

PROBE: What about walking down stairs.

SCORE: Walks down stairs with help. 16 C.28 ☐

101 DOES -- CRAWL/WALK AROUND EXPLORING AND GETTING INTO THINGS?

PROBE: What sort of things does -- do? Inside and outside?

SCORE: Mobile exploratory behaviour inside and outside 14 C.29 ☐

102 DOES -- USE ONE HAND MORE THAN THE OTHER AT ALL?
PROBE: Which? .. Does -- use it much more?
SCORE: Shows preference. 13 C.30 ☐

103-104 DOES -- EVER LOOK AT MAGAZINES AND BOOKS?
PROBE: How does -- turn the pages?
How many does -- usually turn over at a time? C.31 ☐
SCORE: Turns pages usually 2 or 3 at a time 12 C.32
* SCORE: Turns pages of book singly. 23 ☐

105-106 DOES -- HAVE ANY BUILDING BLOCKS?
PROBE: Can -- put one on top of another?
Will it stay there when -- takes -- hand away?
Does -- take -- hand away?
How many blocks can -- put on top of one another? C.33 ☐
SCORE: Builds 2 block tower. 13 C.34
SCORE: Builds 3 block tower. 16 ☐

107 DOES -- HAVE SOMETHING SPECIAL WHICH -- SHOWS OFF?
SCORE: Shows off shoes, clothing or toys. 14 C.35 ☐

108 IF YOU ASK -- FOR A TOY, OR SOMETHING -- IS HOLDING WILL -- GIVE IT TO YOU?
PROBE: Does -- often want it back straight away?
SCORE: Upon request, gives up toys but may immediately want them back. 15 C.36 ☐

109 CAN YOU ASK -- TO GET SOMETHING?
PROBE: Example?
SCORE: Fetches familiar objects when asked. 16 C.37 ☐

110 WHEN YOU ASK -- TO SHOW YOU SOMETHING OR SOMEONE IN PARTICULAR, WHAT DOES -- DO?
PROBE: Does -- point to them when you ask -- to?
SCORE: Points to familiar persons and objects when asked to do so. 15 C.38 ☐

111 WHEN THERE ARE OTHER CHILDREN AROUND WHAT DOES -- DO?
PROBE: What if they are on floor together?
Does watch other children for long?
SCORE: Plays alone i.e. never with other children. 12-24 C.39 ☐

112 DOES -- SAY ANY WORDS?
PROBE: Any others besides "dadda" and "mumu"?
Has -- made up any of -- own words?
SCORE: Some words (approximations and inventions O.K. if intent clear) 14 C.40 ☐

113 WHAT ABOUT HUMMING OR SINGING?
SCORE: Hums or sings. 17 C.41 ☐

114-115 DOES -- SOMETIMES REFUSE OR SEEM UNWILLING TO DO THINGS YOU WANT -- TO DO?
SCORE: Yes 15 C.42 ☐
PROBE: How does -- indicate that -- won't or doesn't want to do it?
Does -- shake -- head to mean "no"?
Does -- mean "no" by some other gesture?
SCORE: Indicates "no" by some gesture. 14 C.43 ☐

116 HOW DOES -- SHOW AFFECTION?
PROBE: Who is -- affectionate to.
SCORE: Demonstrates affection for parent or other adult by e.g. kissing and hugging. 17 C.44 ☐
Specify who........................

117 WHAT DOES -- DO WHEN ANOTHER CHILD TAKES -- TOY OR SOMETHING -- IS EATING?
PROBE: What about if -- is pushed over, or is hit?
Does -- do anything else besides cry?
SCORE: Defends self when taken advantage of. 17 C.45 ☐

118 DOES -- PLAY WITH CONTAINERS LIKE JARS, TINS, BOXES, BOTTLES AND THEIR LIDS?
PROBE: Does -- take the lids off?
Can -- put them back on?
What about screw top lids?
SCORE: Removes and replaces lids (not necessarily screw tops) 17 C.46 ☐

119-122 DOES -- SOMETIMES HAVE A PENCIL/CRAYON?
PROBE: Does -- draw with it?
Without you showing -- what to do?
SCORE: Spontaneous scribbling with pencil. 18 C.47 ☐
PROBE: When -- is scribbling does -- sometimes draw lines?
Which way do the lines go?
SCORE: Draws vertical line. 19 C.48 ☐
SCORE: Draws vertical and horizontal lines. 24 C.49 ☐
PROBE: What about circles?
SCORE: Draws circles. 24 C.50 ☐
ASK: Is there any drawing -- has done recently, which you think -- would let me have?

123-124 DOES -- HAVE A BALL TO PLAY WITH?
PROBE: How big is it?
Can -- throw it, .. catch it?
SCORE: Catches and throws a large ball crudely. 18 C.51 ☐
PROBE: How far?
What is -- aim like?
Can -- throw it in the direction -- wants?
SCORE: Throws a ball 3' in the direction -- wants. 24 C.52 ☐

125 DOES -- PUSH AND PULL LARGE OBJECTS, SAY A CHAIR
AROUND THE FLOOR?
SCORE: Yes 18 C.53 ☐

126 DOES -- HAVE ANY BIG TOYS WITH WHEELS?
PROBE: What is it?
How does -- play with it?
Can -- make it move around?
Does -- sit on it?
Does -- move around on it?
SCORE: Scoots around on wheeled toy. 18 C.54 ☐

127 WHEN -- IS PUTTING THINGS AWAY, DOES --
REMEMBER WHERE SOME THINGS BELONG?
PROBE: (IF NO) Well what about getting
things out?
SCORE: Remembers where some object belong. 18 C.55 ☐

128 HOW DOES -- GO WITH UNDRESSING?
PROBE: What can -- take off himself?
Can -- take -- shoes and socks off?
SCORE: Can take off shoes and socks. 18 C.56 ☐

129-130 WHAT THINGS MAKE -- ANGRY?
PROBE: Does -- get angry often?
SCORE: Occasional and brief temper tantrums 18 C.57 ☐
Does it take -- long to get over it?
Can you distract -- attention and get
-- over it that way?
SCORE: Tantrums when frustrated but
easily distracted. 24 C.58 ☐

131 DOES -- EVER TRY TO COPY THE SOUNDS OF THINGS
AROUND AND ABOUT?
PROBE: What about animal noises?
Car sounds?
SCORE: In play imitates environmental sounds. 20 C.59 ☐

132-133 DOES -- EVER USE TWO WORDS TOGETHER?
PROBE: What does -- say?
(give example if necessary.
"Daddy gone", "shut door")
SCORE: Uses 2-words phrases/sentences
with 2 concepts. (Single concepts
e.g. "all gone", "bye bye" are not
credited). 18 C.60 ☐
PROBE: What about 3 words together.
SCORE: 3 word sentences. 24 C.61 ☐

RECORD EXAMPLES:

134 WHEN THERE ARE OTHER CHILDREN AROUND, WHAT DOES -- DO?

PROBE: Does -- react to them at all?
If they are playing does -- watch them?
Does -- try to join in?

SCORE: Watches other children play without trying to join in. 18-24 C.62 ☐

(REMINDER: Turns pages simply, item 104)

135 DOES -- USE ONE HAND MORE THAN THE OTHER AT ALL?

PROBE: Which hand?

SCORE: Shows definite preference for one hand. 24 C.63 ☐

136 HAS -- BEEN TO A PLAYGROUND WHERE THERE IS LARGE PLAYGROUND EQUIPMENT?

PROBE: Is -- still a little timid about climbing?
What does -- do?

SCORE: Climbs on playground equipment. 20 C.64 ☐

137 HAVE YOU SEEN -- JUMP OFF THE FLOOR/ON THE SPOT.

PROBE: Jumps both feet?

SCORE: Jumps on the spot, (both feet) 23 C.65 ☐

138 HAVE YOU SEEN -- SQUAT DOWN ON -- HAUNCHES TO LOOK AT OR PLAY WITH THINGS ON THE GROUND?

PROBE: How does he stand up from this position?
Can -- stand straight up or does -- need to put -- hands on the ground for support?

SCORE: Rises from squatting without using hands 24 C.66 ☐

139 DOES -- CLIMB ONTO FURNITURE?

PROBE: Has -- climbed up for a purpose sometime e.g. to look out a window or to open a door?

SCORE: Yes 24 C.67 ☐

140-141 HOW DOES -- GO WITH WALKING UP STAIRS?

PROBE: Do you need to help?
Does -- hold onto a rail or something?

SCORE: Walks upstairs unassisted 21 C.68 ☐

PROBE: What about coming down?
Do you need to help?

SCORE: Walks downstairs unassisted. 23 C.69 ☐

142-143 DOES -- HAVE SOME BLOCKS?

PROBE: How many can -- put on top of one another?
Does it fall over as soon as -- puts the last block on?

SCORE: Builds 4 block tower. 17 C.70 ☐

SCORE: Builds 6 block tower. 23 C.71 ☐

IF LESS, GO BACK TO ITEM 106. IF MORE, GO TO ITEM 185.

144 DOES -- RECOGNIZE THINGS -- SEES ON T.V.
PROBE: Does -- recognize them later
e.g. a picture of Humphrey Bear?
SCORE: Identifies familiar things seen
on T.V. 22 C.72 ☐

145 DOES -- KNOW THE NAMES OF -- PLAYMATES?
PROBE: (IF YES) Can -- say them?
(IF NO) Even if -- can't say them do
you think -- still knows them?
SCORE: Knows names of playmates. 22 C.73 ☐

146 DOES -- KNOW THE NAMES OF SOMETHINGS?
PROBE: Can -- say them?
What things can -- name?
Could a stranger recognize what --
says?
SCORE: Names familiar objects 24 C.74 ☐

147 DOES -- EVER TALK TO --SELF WHEN -- IS PLAYING?
PROBE: What sort of things does -- say?
SCORE: Talks to self while playing. 24 C.75 ☐

148 DO YOU SING SONGS OR SAY NURSERY RHYMES FOR --?
PROBE: What sort of things?
Does -- try to join in sometimes?
Does -- manage to sing along?
Does -- know a whole verse?
SCORE: Joins in nursery rhymes and/or songs. 24 C.76 ☐

149 DOES -- EVER PRETEND TO BE ASLEEP?
PROBE: Does -- ever pretend to do other things?
When -- is playing does -- sometimes
do something that has happened the
day before?
Does -- copy things that you were doing
a day before?
SCORE: Imitates own or anothers actions
at a later date. 22 C.77 ☐

150-151 BESIDES TOYS, DOES -- PLAY WITH OTHER BITS AND PIECES e.g. BLOCKS OF WOOD, JARS, PLASTIC BOWLS etc? DOES -- PRETEND THAT THESE ARE SOMETHING ELSE?
PROBE: e.g. A boat, house?
SCORE: Uses objects, pretending they are
other things. 24 C.78 ☐
PROBE: Does -- have a doll or a teddy bear?
Does -- make it do things, e.g.
sleep, drink?
Does -- tell it off? What about
animals?
SCORE: Makes doll or teddy bear do things
or might scold dolls or animals. 26 C.79 ☐

152 WHAT THINGS INTEREST -- MOST?
PROBE: What sort of toys is -- interested in?
For how long will -- play with these?
Is -- sometimes really curious about people?
SCORE: Shows active interest or curiosity in toys, things or persons for a few minutes or longer. 23 C.80 ☐

CARD 4 STARTS
DUPLICATE
COLS. 1-3
PUNCH 4 IN
COL 4 PROCEED.

153 DOES -- KNOW WHAT'S "HIS"/"HERS"?
PROBE: How does -- show this?
Does -- defend -- possessions when some other child tries to take them?
SCORE: Reveals sense of ownership, recognizes "his", defends possessions. 24 C.5 ☐

154 DOES -- MANAGE TO GET THE PAPER OFF LOLLIES BY --SELF?
PROBE: What about unwrapping other small objects?
Does -- use only -- fingers?
SCORE: Unwraps small objects. 24 C.6 ☐

155 DOES -- HAVE ANY THREADING BEADS?
PROBE: Do you know if -- can thread large beads onto a string?
Does -- thread several beads or does -- thread and take off then thread again just a few?
SCORE: Threads. 24 C.7 ☐

156 WHAT ABOUT GOING TO THE TOILET?
PROBE: Does -- usually ask to go to the toilet?
In good time?
SCORE: Asks to go to the toilet in good time. 24 C.8 ☐

157-159 WHAT HAPPENS WHEN THERE ARE OTHER CHILDREN AROUND WHO ARE PLAYING?
PROBE: Does -- watch them play?
Does -- try to join in?
What sort of games do they play?
SCORE: Tries to join in the play of other children but doesn't actually play with them. 24-36 C.9 ☐

SCORE: Plays alongside other children but doesn't actually play with them. 24-36 C.10 ☐

PROBE: Does -- make things with other children?
SCORE: Makes things with other children. 26 C.11 ☐

160 WHAT SORT OF THING DOES -- ASK FOR HELP ABOUT?
PROBE: Does this happen often?
What does -- say to ask for help?
SCORE: Asks for help, "I can't do it". 27 C.12 ☐

161 DOES -- STAND ON TIPTOES AT ALL?
PROBE: How far can -- walk on tiptoes?
SCORE: Stands on tiptoes and walks on tiptoe for some distance. 28 C.13 ☐

162 DOES -- RUN AROUND A LOT?
PROBE: Does -- play "chasey" much?
When -- is being chased does -- make sudden changes in direction?
How well does -- run?
Is -- clumsy?
SCORE: Runs smoothly, turning sharp corners and making sudden stops with ease. 28 C.14 ☐

163 DOES -- HAVE A TRICYCLE?
PROBE: Can -- ride it?
Does -- use the pedals to move along?
SCORE: Rides tricycle using pedals. 30 C.15 ☐

164 CAN -- DO A SOMERSAULT?
PROBE: How well does -- do it?
SCORE: Does a forward somersault. 30 C.16 ☐

165 WHAT ABOUT KICKING A BALL?
PROBE: Does -- just walk into it?
Does -- need to hold onto something while -- is kicking it?
SCORE: Kicks a large ball. 30 C.17 ☐

166-167 HOW IS -- WHEN -- MEETS STRANGERS?
PROBE: (IF SHY) Does -- stay shy or thaw out?
SCORE: Is usually friendly towards strangers but only after a little shyness. 39 C.18 ☐
PROBE: What about when -- comes across an adult -- knows?
SCORE: Usually responds to known adults in a friendly manner. 29 C.19 ☐

168 HOW DOES -- GET ON WHEN -- IS POURING WATER?
PROBE: Say out of a jug, into a glass?
Does -- spill much?
SCORE: Can pour water from a jug (not toy jug) without spilling. 29 C.20 ☐

169-170 DOES -- HAVE ANY BUILDING BLOCKS? HOW MANY BLOCKS CAN -- PUT ON TOP OF ONE ANOTHER?
PROBE: Can -- take -- hands away?
SCORE: Builds 7 or 8 block tower. 30 C.21 ☐

SCORE: Builds 9 or 10 block tower. 36 C.22 ☐

171 DOES -- LIKE LISTENING TO STORIES YOU READ --?
PROBE: How does -- show this?
Does -- ask for stories?
Can -- sit through a whole story.
SCORE: Enjoys stories. 30 C.23 ☐

172 AT THIS STAGE CHILDREN OFTEN LIKE TO PRETEND THAT THEY ARE ADULTS. DOES -- LIKE TO PLAY HOUSES?
PROBE: What kinds of things does -- do?
What about pretending to drive a car, or do Dad's work?
About how long does -- occupy -- self this way?
SCORE: Domestic make believe play for 15 minutes. 30 C.24 ☐

173 SOME CHILDREN OF THIS AGE REPEAT THINGS THEY SAY OVER AND OVER AGAIN. DOES -- DO THIS?
PROBE: What sort of things?
When does -- do it?
SCORE: Sentence/phrase repetition echolia specify when .... 30 C.25 ☐

174-175 IF YOU ASK -- CAN -- TELL -- OWN NAME?
SCORE: Tells own name 30 C.26 ☐
PROBE: What about -- surname?
SCORE: Gives full name (first and last) (clearly recognizable) 36 C.27 ☐

176-177 DO YOU THINK -- KNOWS WHICH CHILDREN ARE BOYS AND WHICH ARE GIRLS?
PROBE: How does -- show this?
SCORE: Refers to other children as boys and girls correctly. 30 C.28 ☐
PROBE: What does -- say -- is?
SCORE: Refers to self as boy/girl correctly. 30 C.29 ☐

178-180 DOES -- ASK QUESTIONS?
SCORE: Asks questions. 30 C.30 ☐
PROBE: What sort of things does - ask about?
What does -- say?
What question words does -- use?
Does -- ask questions beginning with "who"?
SCORE: Asks questions beginning with "who". 32 C.31 ☐
PROBE: Questions including "why", "when", "how"?
SCORE: Yes C.32 ☐

181 DOES -- TALK TO YOU ABOUT THINGS?
PROBE: What sort of things?
Does this happen like a conversation?
SCORE: Takes some part in conversations. 30 C.33 ☐

182 DOES -- TELL YOU ABOUT THE SIZE OF THINGS?
PROBE: What size words does -- use?
Does -- use them properly?
SCORE: Compares size and uses size words correctly. 30 C.34 ☐

183 HOW DOES -- HOLD A PENCIL, OR A CRAYON?
SCORE: Holds pencil or crayon in hand, not fist. 30 C.35 ☐

184 WHEN -- IS PAINTING OR COLOURING IN, DOES -- HAVE A FAVOURITE COLOUR?
PROBE: How many colours does -- usually use?
SCORE: Uses more than one colour 30 C.36 ☐

185-186 DOES -- HAVE A SET OF BUILDING BLOCKS?
PROBE: How many blocks can -- stack on top of one another?
Will they stay standing when -- takes -- hand away?
SCORE: Builds 7 or 8 block tower. 30 C.37 ☐
SCORE: Builds 9 or 10 block tower. 36 C.38 ☐
IF LESS GO BACK TO ITEM 143.

187 DOES -- LIKE MUSIC?
PROBE: Does -- sometimes clap -- hands in time to the music?
Does -- dance sometimes?
SCORE: Keeps time to music by clapping. dancing etc. 30 C.39 ☐

188 IS -- ABLE TO TELL YOU -- REASONS FOR DOING OR NOT DOING THINGS?
PROBE: Does -- tell you why -- didn't do something, when you asked -- to?
SCORE: Makes excuses (If confused with lying, then clarify). 32 C.40 ☐

189 DOES -- TELL YOU IF OTHER CHILDREN HAVE DONE SOMETHING WRONG OR HAVE BEEN NAUGHTY?
SCORE: "Tells on" other children. 31 C.41 ☐

190 DOES -- LIKE TO PLAY TRICKS ON OTHER CHILDREN?
PROBE: How about teasing?
SCORE: Teases other children. 32 C.42 ☐

191 DOES -- TRY TO TELL YOU ABOUT WHAT -- IS DOING?
PROBE: What kinds of things?
Does -- tell you while -- is doing it or afterwards?
SCORE: Tries to tell about things -- is doing. 31 C.43 ☐

192 DOES -- SOMETIMES TELL PEOPLE WHAT HAPPENED TO -- RECENTLY?

PROBE: For example, does -- tell you what happened earlier in the day?
Does -- tell you what happened yesterday?
What about 2 or 3 days before?

SCORE: Tells what happens in the recent past (at least 2 or 3 days before). 32 C.44 ☐

193 DOES -- TELL YOU ABOUT -- DRAWINGS?

PROBE: Does -- tell you what -- has drawn in the picture?
About the things there?

SCORE: Names and talks about what -- has drawn. 33 C.45 ☐

194-195 WHAT GAMES DOES -- PLAY WITH OTHER CHILDREN?

PROBE: Does -- start these games and the others join in?
What about other activities with other children? Does -- start these sometimes?

SCORE: Initiates activities involving others. 32 C.46 ☐

PROBE: Does -- tell other children what to do?

SCORE: Gives directions to other children. 35 C.47 ☐

196 HAS -- A FAVOURITE PLAYMATE OR PLAYMATES?

PROBE: Is -- able to play with them/him/her very much?

SCORE: Has a favourite playmate. 35 C.48 ☐

197 DOES -- TELL YOU HOW -- FEELS?

PROBE: For example, does -- say -- feels happy?
Perhaps some other feeling? (e.g. "mad", "bad," "sad")
How often?
When?

SCORE: Express feelings in words. 35 C.49 ☐

198 DOES -- HAVE A SIMPLE JIGSAW PUZZLE OR A SIMPLE TOY WHICH COMES APART? (ABOUT THREE PARTS ONLY)

PROBE: Can -- put it together?
How much help does -- need?

SCORE: Assembles simple parts (not requiring much mechanical skill). 34 C.50 ☐

199-200 WHAT SORT OF THINGS DOES -- USUALLY DO FOR --SELF?
PROBE: Can -- wash -- face and hands?
Can -- dry them?
SCORE: Can wash face and dry hands. 35 C.51 ☐
PROBE: What about undressing?
Dressing?
SCORE: Can take off clothes without any supervision (if no difficult fastenings). 39 C.52 ☐

201 DOES -- SING?
PROBE: What does -- sing?
Does -- know the words of a whole verse?
Does -- forget sometimes?
What about nursery rhymes can -- say one?
SCORE: Sings or says nursery rhymes, pop songs, T.V. commercial (Knows whole verse). 35 C.53 ☐

202 DOES -- HAVE A TROLLY/CART/PRAM OR SOME OTHER TOY ON WHEELS?
PROBE: Does -- move around on it?
How does -- go with getting it around corners and things in -- way?
SCORE: Manouvres large wheeled toys around corners and obstacles. 35 C.54 ☐

203 DOES -- LIKE TO HELP YOU?
PROBE: What does -- do?
e.g. setting the table etc.
When out, or shopping.
SCORE: Likes to help with adult activities. 35 C.55 ☐

204 IS -- SOMETIMES AFFECTIONATE TOWARDS OTHER CHILDREN?
PROBE: To brother(s)/sister(s)?
To a younger child?
How does -- show?
SCORE: Shows some affection for younger children and/or siblings. 36 C.56 ☐

205 HOW DOES -- TELL YOU ABOUT MORE THAN ONE OF SOMETHING?
PROBE: For example does -- use words like "they", "we", "dogs", "children", "trees"?
What words does -- use?
SCORE: Uses plural of nouns and pronouns. 36 C.57 ☐

206 DO YOU THINK -- KNOWS THAT SOME THINGS ARE THE SAME AND OTHERS ARE DIFFERENT?
PROBE: What makes you think this?
Does -- use the words "same" and "different"?
SCORE: Is aware of similarities and differences; uses "same" and "different". 36 C.58 ☐

207 CAN -- STAND ON ONE LEG?
PROBE: (IF YES): Which one?
(How long can -- stand on one leg?
(IF NO): For even a moment?
SCORE: Balances on one leg (briefly). 36 C.59 ☐

208 WHAT DOES -- USE TO EAT WITH?
PROBE: Can -- use a fork?
What about a knife?
SCORE: Has started to use knife and fork. 37 C.60 ☐

209 DOES -- PLAY WITH LITTLE TOY ANIMALS/DOLLS IN A DOLLS HOUSE?
PROBE: Does -- make believe with them?
What does -- do?
SCORE: Plays with small representational toys in make believe games. 38 C.61 ☐

210 DOES -- WANT TO KNOW THE NAMES OF THINGS?
PROBE: What does -- say to ask you?
SCORE: Shows that -- wants to know the names of things by asking "What's that" or using other similar words. 38 C.62 ☐

211-212 WHEN THERE ARE OTHER CHILDREN AROUND, DOES -- PLAY WITH THEM OR BY -- SELF?
PROBE: What usually happens?
Does -- join in with their games?
What games do they play together?
For example, follow the leader, chasey?
SCORE: Plays in association with others in group games, observing rules with give and take or in competition e.g. chasing, follow the leader. 36 C.63 ☐
PROBE: What about other things where there are no rules?
For example, dressing up, sandpit play, block building?
SCORE: Sometimes joins in and does what children in a group are doing. 39 C.64 ☐

213 DOES -- ASK WHAT SOME WORDS MEAN?
SCORE: Asks the meaning of words. 41 C.65 ☐

214-215 DOES -- HAVE CONVERSATIONS WITH YOU?
PROBE: Do they go like; you say something then -- says something, then you; then --? Is that how it is?
Can it go on for very long?
SCORE: Carries on a simple conversation. 39 C.66 ☐
PROBE: Does -- talk in sentences sometimes?
SCORE: Converses in sentences. (The child should be observed or reported to use two or more sentences conversationally). 42 C.67 ☐

216 HOW FAR CAN -- COUNT?
PROBE: If you say, "Hand me 3 things"
can -- do it?
If you say "Hand me 4 things"
Can -- count things?
SCORE: Counts to 3 or 4, not rote. 42 C.68 ☐

*IF MORE, GO TO ITEM 246.

217 DOES -- PLAY QUIETLY BY --SELF SOMETIMES?
PROBE: How long does -- play by --self?
Does -- do this very much?
When? During the day?
SCORE: Sometimes solitary quiet play
for about 30 minutes. 42 C.69 ☐

218 DOES -- PLAY ON SWINGS?
PROBE: Does someone usually push?
Can -- swing by --self?
How well can -- do it?
SCORE: Swings, pumping self. 43 C.70 ☐

219 WHAT ABOUT HOPPING?
PROBE: Which foot? Both?
How far can -- hop?
SCORE: Hops on one foot some distance,
or on the spot for some time
(About 10 hops) 43 C.71 ☐

220-221 DOES -- SOMETIMES ACT OUT SIMPLE STORIES?
PROBE: Does -- sometimes pretend to
be someone else?
Does -- dress up sometimes?
SCORE: Beginnings of dramatic play
e.g. plays familiar role, acts
simple stories. 44 C.72 ☐
PROBE: Does -- ever put on a "play",
"show", "act"?
SCORE: Performs for others e.g.
dresses up or acts out
nursery rhymes. 45 C.73 ☐

(REMINDER: ASK PLAY ITEMS 211, 212).

222 DOES -- SIT CROSS LEGGED?
SCORE: Can sit on the floor cross
legged. 45 C.74 ☐

223 IS -- USUALLY FRIENDLY TOWARDS OTHER CHILDREN?
PROBE: What about with strange children?
SCORE: Usually friendly with other
children (including strangers) 44 C.75 ☐

224 ARE THERE SOMETIMES LITTLE SQUABBLES WHEN
-- PLAYS WITH OTHER CHILDREN?
PROBE: What are these about?
Do they happen very often?
SCORE: Usually plays with other children
with little squabbling. 45 C.76 ☐

225 DOES -- SOMETIMES TRY TO COUNT THINGS WHILE -- IS PLAYING?
PROBE: How many things can -- count?
SCORE: Sometimes tries to count things while playing. 45 C.77 ☐

226 DOES -- USUALLY LIKE TO DO THINGS FOR --SELF?
PROBE: What if -- can't do something?
Does -- mind being helped?
SCORE: Usually likes to do things for self but if in difficulty, accepts help. 46 C.78 ☐

227 DO STRANGERS EASILY UNDERSTAND WHAT -- SAYS?
SCORE: Speech easily understood by strangers. 45 C.79 ☐

228 DOES -- USE THE WORD "AND"?
PROBE: How does -- use it?
Example?
To join phrases and sentences?
SCORE: Uses "and" to join phrases or sentences into continuous speech. 46 C.80 ☐

CARD 5 STARTS
DUPLICATE
COLS. 1-3
PUNCH 5 IN
COL. 4. PROCEED

229 WHAT ABOUT THE WORDS "TODAY", "YESTERDAY" AND "TOMORROW"?
PROBE: Which does -- use?
When -- says this (e.g. "yesterday") does -- really mean what happened the day before?
Can you think of an example of -- using it?
SCORE: Uses the words "today", "yesterday", and "tommorw" correctly. 47 C.5 ☐

230-232 WHAT SORT OF THING DOES -- DRAW/PAINT?
PROBE: Do they really look like what -- says they are?
SCORE: Pictures easily recognizable as people, houses, (animals) etc. 47 C.6 ☐
PROBE: How does -- draw a person?
Did -- do this without any help?
Nobody told -- what to draw in?
SCORE: Spontaneously draws a person with head and legs, specify what else .... 48 C.7 ☐
PROBE: When -- draws just a head on a page, what details does -- put in?
Eyes? Anything else?
SCORE: Head, including eyes, nose, mouth, ears, hair (4 passes) Specify what .... 48 C.8 ☐

HAVE YOU ANY OF -- DRAWINGS OR PAINTINGS WHICH -- WOULDN'T MIND ME TAKING?

233 DOES -- TELL YOU ABOUT -- DRAWINGS?
PROBE: What sort of things does -- tell you?
Does -- tell you about what is happening in it?
SCORE: Can describe what is happening in picture rather than just naming the objects. 48 C.9 ☐

IF NAMES ONLY GO BACK TO ITEM 193.

234 CAN -- PRINT -- FIRST NAME?
PROBE: How well does -- do it?
SCORE: Prints first name (reasonably well). 54 C.10 ☐

235 DO YOU SOMETIMES GIVE -- A NOTE TO TAKE TO SOMEONE ELSE?
PROBE: For example, to take to the neighbours?
Or to the local shop, with a purse?
SCORE: Capable of running errands or taking messages to neighbours another person, or to the local shop. 48 C.11 ☐

236-238 DOES -- EVER COMPLAIN OF BEING TOO COLD OR TOO HOT?
PROBE: Does -- say the words "hot" and "cold"?
SCORE: Understands concept of temperature. 48-60 C.12 ☐
PROBE: What about when something is too heavy for -- when -- tries to lift it?
What does -- say?
SCORE: Understands the concept of weight. 48-60 C.13 ☐
PROBE: Does -- ever try to tell you that something is far away?
For example about somebody who lives far away?
What about telling you that something or somebody is close or near, or that things are close together?
Could you give me an example of something -- has said like this?
SCORE: Understands concept of distance. 48-60 C.14 ☐

239 DOES -- BUILD THINGS OUTSIDE?
PROBE: What does - use?
SCORE: Constructive out of doors building with any large material at hand. 48 C.15 ☐

240 DOES -- "TAKE IT IN TURNS" WITH OTHER CHILDREN IF THEY NEED TO SHARE SOMETHING?
PROBE: Then -- understands about taking turns?
SCORE: Understands taking turns. 48 C.16 ☐

241 DOES -- PLAY QUIETLY BY -- SELF SOMETIMES?
PROBE: How long can -- amuse -- self?
Does -- do this often?
SCORE: Amuses self for up to 1 hour. 48-60 C.17 ☐

242 DOES -- GET EXCITED ABOUT GOING SOMEWHERE?
PROBE: Does -- like to go visiting?
Does -- get excited before going?
What about before trips on holiday?
Does -- mind changes in -- routine much?
SCORE: Anticipates trips, not upset by changes in routine. 48-60 C.18 ☐

243 DO YOU THINK -- RECOGNIZES SOME COLOURS?
PROBE: (IF YES) Which colours?
What does -- do which shows -- recognizes them?
(IF NO) : Some children play with lots of coloured blocks, or with coloured pencils, putting all the reds together, the blues together, etc.
Have you noticed -- do anything like this?
SCORE: Recognizes colours (red, blue, yellow, green). 49 C.19 ☐

(IF NAMES 5 COLOURS, GO TO ITEM 271)

244 WHAT DOES -- DO WHEN -- WANTS TO GO TO THE TOILET DURING THE NIGHT?
PROBE: Does -- call you?
Can -- go by --self?
SCORE: Goes to toilet by self during the night. 50 C.20 ☐

245 DOES -- HAVE FRIENDS NEAR HOME WITH WHOM -- GOES TO PLAY?
PROBE: How far away?
Can -- get there by -- self?
SCORE: Goes about the neighbourhood unattended. 51 C.21 ☐

246 HOW FAR CAN -- COUNT PROPERLY?
PROBE: If you say, "Hand me three things", can -- do it?
If you say, "Hand me four things"?
What about five things?
Can -- count five things, like counting five blocks?
SCORE: Concept of five. 52 C.22 ☐

IF 3 OR 4 ONLY GO BACK TO ITEM 216.
IF COUNTS SERIALLY TO 10 GO TO ITEM 270.

247 DOES -- BUY THINGS AT THE SHOP FOR YOU?
PROBE: Does -- get anything for --self?
(If yes) Does -- choose it --self, pay for it -- self?
SCORE: Uses money to make own purchases. 52 C.23 ☐

248-249 DOES -- USE ODDS AND ENDS TO MAKE THINGS?
PROBE: What has -- made?
What did -- use?
SCORE: Makes things out of odds and ends. 52 C.24 ☐
PROBE: Is -- proud of them?
What other things is -- proud of?
SCORE: Shows pride in accomplishments or products. 48-60 C.25 ☐

250 CAN -- BRUSH -- OWN HAIR?
PROBE: What about combing it?
SCORE: Can comb and brush hair. 53 C.26 ☐

251-253 HOW DOES -- GET ON WITH DRESSING?
PROBE: Can -- button up -- shirt/blouse?
SCORE: Buttons shirt/blouse/coat correctly. 54 C.27 ☐
PROBE: Then -- has no trouble with dressing?
Do you need to help sometimes?
What about with undressing?
SCORE: Dresses and undresses without help. 54 C.28 ☐
PROBE: Can -- get -- self ready for bed?
Do you help?
SCORE: Gets ready for bed without help. 55 C.29 ☐

254-255 CAN -- DRAW OR COPY A SQUARE?
PROBE: How good is it?
SCORE: Draws or copies a square. 54 C.30 ☐
PROBE: What about a cross?
Do you know how -- draws them usually, what do they look like?
SCORE: Draws or copies a cross. 54 C.31 ☐

(COLLECT ANY DRAWINGS POSSIBLE).

256 HAS -- EVER PLAYED WITH PLASTICENE, OR CLAY?
PROBE: Did -- model things out of it?
SCORE: Makes models. 54 C.32 ☐

257 DOES -- DREAM MUCH?
PROBE: Does -- talk to you about -- dreams?
What sort of thing does -- tell you?
SCORE: Tells what -- dreams about. 55 C.33 ☐

258 DOES -- EVER TELL YOU A STORY SOMEBODY HAS TOLD --?
PROBE: Like "Little Red Riding Hood", or
"The Three Bears"?
Does -- tell all the important parts
of the story?
SCORE: Tells a well-known story. 55-66 C.34 ☐

259 DOES -- EVER TALK ABOUT HOW OTHER PEOPLE
FEEL?
PROBE: For example -- might have said --
little brother/sister/playmate
is frightened.
He might have said that someone
was feeling cross, or sick.
(IF YES): Is -- often right?
SCORE: Sometimes shows -- appreciates
how others feel. 55-66 C.35 ☐

260 IS -- STARTING TO EXPLAIN THINGS THAT HAVE
HAPPENED TO --SELF?
e.g. at Kindergarten, at Grandma's, on holiday.
(Note - not giving excuses)
PROBE: If you ask -- to explain about
this or why it happened is --
able to tell you more?
Does use words like "because"
when doing this?
SCORE: Starting to give reasons and
explanations to elaborate own
experiences etc., to others. 55-66 C.36 ☐

261 DOES -- SOMETIMES ASK HOW -- BODY WORKS?
PROBE (IF YES): What does -- ask?
(IF NO) : For example, about --
heartbeat, or why -- has hair?
SCORE: Asks questions about -- own body. 55-66 C.37 ☐

262 CAN -- USE A KEY?
PROBE: What sort of key?
Can -- unlock?
Lock?
SCORE: Uses a key. 55-66 C.38 ☐

263-264 CAN -- SPREAD THINGS ON BREAD?
PROBE: What does -- use to spread?
SCORE: Uses a knife to spread. 55-66 C.39 ☐
PROBE: Can -- make -- self a sandwich?
SCORE: Can make a sandwich. 55-66 C.40 ☐

265 DOES -- EVER DRAW A PICTURE WITH TWO THINGS
IN IT?
PROBE: Has -- done a picture, I could see?
SCORE: Draws pictures including more than
one object. 56 C.41 ☐

266 DOES -- DRAW PEOPLE?
PROBE: When -- draws a man, does he look like a man?
How does -- draw him?
What does -- put in?
SCORE: Man with 6 parts (2 eyes = 1 part, similarly legs etc.) 57 C.42 ☐

267 DOES -- HAVE ANY COLOURING-IN BOOKS?
PROBE: Does -- have a go at colouring in the pictures?
How well does -- do it?
Does -- stay within the lines?
SCORE: Colours within the lines in a colouring book. 56 C.43 ☐

268 DOES -- KNOW ANY RIDDLES?
PROBE: What about jokes?
Does -- tell them?
SCORE: Tells jokes or riddles. 57 C.44 ☐

269 DOES -- EVER TALK ABOUT SOMETHING WHICH COULD HAPPEN?
PROBE: (IF YES) What does -- talk about?
(IF NO) Does -- ever talk about what would happen if -- went out in the rain without a raincoat or what would happen if -- wasn't careful crossing the road?
SCORE: Comprehends possible, future events. 60 C.45 ☐

270 HOW FAR CAN -- COUNT?
PROBE: Does -- make many mistakes?
SCORE: Counts to 10 properly. 60 C.46 ☐

271 CAN -- TELL YOU THE NAMES OF ANY COLOURS?
PROBE: What colours are these?
Anymore?
SCORE: Names 5 colours,
Specify .... 60 C.47 ☐

272 DOES -- SKIP SOMETIMES INSTEAD OF RUNNING?
SCORE: Skips (not rope) 60 C.48 ☐

273 WHAT SORT OF THINGS DO THEY DO WHEN -- PLAYS WITH OTHER CHILDREN?
PROBE: Do they make things?
Do they really play with each other, or are they really only playing their own separate thing?
SCORE: Cooperative play. 60 C.49 ☐

APPENDIX 4. ITEMS SELECTED FOR EXPERIMENTAL VERSION I

New Number	Old Number	Name (Abbreviated version)
		LANGUAGE
1	8	Laughs, chuckles.
2	42	Makes distinct separate sounds.
3	43	Two syllable babbling.
4	79	Imitates sounds, coughs etc.
5	40	Makes several sounds 1 breath.
6	32	Plays at making sounds when alone etc.
7	112	Some words besides "mamma", "dadda".
8	131	In play copies outdoor sounds.
9	109	Fetch familiar objects if asked.
10	83	Responds, reacts to simple phrases.
11	89	Demands by pointing and vocalizing.
12	90	Vocalizes, points to show adults.
13	132	2 word phrases 2 concepts.
14	133	Uses 3 word sentences.
15	146	Names familiar objects.
16	148	Joins in nursery rhymes/songs.
17	215	Converses in sentences.
18	191	Tries to tell about what he is doing.
19	205	Uses plurals of nouns/pronouns.
20	227	Speech easily understood by strangers.
21	228	Uses "and" to join phrases etc. into continuous speech.
22	201	Sings, says nursery rhymes, songs, T.V. ads. etc.
23	258	Tells well known story.
24	260	Gives reasons, explanations to elaborate experiences.

New Number	Old Number	Name
25	233	Describes, not just names, what happening in drawings.
26	268	Tells jokes, riddles.
		COGNITIVE-ADAPTIVE
27	1	Watches face.
28	6	Turns head to voice.
29	27	Holds, looks at, shakes rattle.
30	31	Bangs objects when playing.
31	46	Recognizes familiar people.
32	54	Hits together objects in hand.
33	76	Drops objects as game/to watch.
34	74	Looks for objects if seen dropped/hidden.
35	73	Looks for objects not in right place.
36	57	Hold out/release objects to others.
37	75	Searches for toy even if not seen hidden.
38	110	Points to if asked.
39	127	Remember where some objects belong.
40	144	Identifies familiar things from T.V.
41	145	Knows names of playmates.
42	150	Uses objects in pretending play.
43	178	Asks questions.
44	151	Makes dolls do things/act out in play.
45	149	Imitates actions at later date.
46	193	Names/talks about what has drawn.
47	192	Recalls events from recent past.
48	210	Asks names of things.
49	265	Draws pictures with more than 1 object.
50	216	Understands concepts of 3, selects 3 objects.

New Number	Old Number	Name
51	266	Draws human figure at least 6 parts.
52	230	Pictures recognizable as people, houses etc.
53	246	Understands concept of 5. (selects 5 objects).
54	271	Names/recognizes 5 colours.
55	232	Drawing of head includes 4 parts (eyes, nose, mouth etc.).
		FINE-MOTOR
56	3	Turns head to watch movement.
57	4	Turns head to light/sound.
58	37	Grasps feet.
59	52	Transfers objects hand to hand.
60	53	Hold object each hand same time.
61	70	Pokes finger into holes/at objects.
62	85	Helps hold bottle/cup when drinking.
63	56	Holds out toys but not release.
64	55	Pincer grasp evident.
65	118	Removes/replaces lids.
66	105	Builds 2 block tower.
67	106	Builds 3 block tower.
68	142	Builds 4 block tower.
69	154	Unwraps small objects.
70	143	Builds 6 block tower.
71	168	Pours water from jug without spilling.
72	185	Builds 7-8 block tower.
73	198	Assembles simple puzzles/toys.
74	183	Holds pencil/crayon in hand - not fist.
75	186	Builds 9-10 block tower.

New Number	Old Number	Name
76	251	Buttons shirt/blouse/coat correctly.
77	234	Prints first name.
	SOCIAL-PERSONAL	
78	68	Laughs at games.
79	2	Smiles at people.
80	5	Crying stopped by voice/picked up.
81	84	Feeds self rusk/biscuit.
82	47	Distinguishes strangers. Cries, frowns, clings.
83	86	Insists on/tries doing things for self.
84	87	Tries to help with dressing.
85	51	Stops activity when name called.
86	116	Demonstrates affection.
87	153	Reveals sense of ownership defends possessions.
88	115	Indicates "no" by some gesture.
89	117	Defends self when taken advantage of.
90	128	Can take off shoes and sox.
91	157	Tries to join in play of others but doesn't actually play with them.
92	212	Sometimes joins in with what other children are doing.
93	195	Gives directions to other children.
94	224	Usually plays with other children. Some little squabbles.
95	176	Recognises others as boys/girls accurately.
96	175	Gives full name, first and last clearly and accurately.
97	252	Dresses and undresses without help.
98	253	Gets ready for bed without help.

New Number	Old Number	Name
		GROSS MOTOR
99	39	Rolls over back-stomach.
100	38	Rolls over stomach-back.
101	61	Pulls to sit if hands held.
102	91	Sitting turns to get object.
103	17	On tummy lifts chest, holds well.
104	62	Pulls to stand using furniture.
105	22	Sits, back and head unsupported.
106	93	Walks with 1 hand held.
107	59	If held under arms makes stepping movements.
108	126	Scoots around on wheeled toy.
109	95	Walks well.
110	136	Climbs on playground and other equipment.
111	137	Jumps on spot - both feet.
112	165	Kicks large ball.
113	162	Runs smoothly; turns stops, quickly, with ease.
114	163	Rides tricycle using pedals.
115	219	Hops on 1 foot: on spot or travels.
116	239	Makes out of door constructions with large materials, boxes etc.

APPENDIX 5.

DRAFT GUIDE OF
ADMINISTRATION AND SCORING PROCEDURES
to accompany
THE DEVELOPMENTAL RECORD FOR INFANTS
AND YOUNG CHILDREN (EXPERIMENTAL VERSION I)

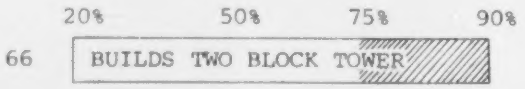
INTRODUCTION

Many cases of delays in development are not discovered until the early years of middle childhood especially when difficulties begin to show in the first year or so of the child's schooling. A number of the causes of slow development can be treated of their effects modified if diagnosed early enough. It is important then that the children who have these problems in development and behavior be discovered as early as possible so that appropriate action might be taken.

This Developmental Record has been devised to provide a method of discovering early developmental lag or delay. It has been designed to be used by those who have some knowledge of and prior contact with the particular children whose development is being considered but who do not necessarily have special training in the administration of psychological tests. In fact the information which is recorded is not gained in a test type context but from observing the child in a number of day to day situations.

FORMAT

Although the form of this developmental record may look a little difficult this is really not so. A child is judged on only a small number of the total number of items namely those that are appropriate for his age. The items are arranged in five areas of development, (Language, Cognitive-Adaptive, Fine Motor, Personal-Social, Gross Motor) and each item of behavior is presented as a range of ages during which children have been shown to develop without cause for concern. Across the top and bottom of the record form ages are listed at two month intervals; it will be noticed that these intervals are closer after age 30 months. Each of the items is represented on the record form by a bar which is placed between its appropriate age scales and shows when 25%, 50%, 75% and 90% of most children acquire that behavior. In some cases different percentages may be shown.



In this item (number 66) the left hand end of the bar shows that 20% (not 25% as is usual for most of the items) of most children can build a 2 block tower at 10 months, 50% at 13 months, 75% at 15 months and 90% at 19 months. All of the items are shown on the record form in this way.

GENERAL ADMINISTRATION INSTRUCTIONS

The usefulness of this record depends on the observer seeing what the child can do or on having another reliable observation of that behavior. In some cases you may not be able to obtain all the information you need in this way. When thishappens you should set up some kind of play activity for the child so that you can introduce the activity and observe the children without intruding. The whole emphasis is to eliminate the need for a formal test type situation as we feel that this creates problems within the particular context of the purposes and objectives of this developmental record.

RECORDING AGE

The child's age will need to be calculated so that you can record his behaviors accurately. This is done by completing the details of birthdate and date of recording in the top right hand corner of the Record form and calculating the child's age by subtracting birthdate from recording date as follows

	Year	Month	Day
Date of Recording	77	$\cancel{3}^{15}$	$\cancel{15}^{45}$
Date of Birth	$\cancel{74}^{75}$	$\cancel{8}^{9}$	25
	2Yrs.	6Mths,	20 Days

Note: When "borrowing" use 30 days = 1 month.

The child's age is 2 years, 6 months, 20 days.

DRAWING IN THE AGE LINE

Use the month ages shown at the top and the bottom of the record form as a guide for drawing the age line. Draw a line through the five sections of the test form at the child's exact age.

In the example calculated above 2 years, 6 months, 20 days, is 30 2/3 months so the age line should be drawn through the five sections from top to bottom of the form just to the right of the 30 month markers.

NUMBER OF ITEMS TO BE GIVEN

The number of items to be given will vary with the age of the child being tested. Begin each section with items below the age of the child to the left of the age line and work up to his age continuing to record upward to the right until he has three "no passes" in that section (This will not apply to older children). All items through which the age line passes should be considered. In addition each section should have at least 3 items which are "passes" and three which are "no passes" (this will not always apply for older children). Make sure that the child has several "passes" to the left of any "no pass".

RECORDING BEHAVIORS

Each item should be indicated just to the left of the age line where it passes through the item. Use the following codes to indicate the child's behavior.

Y for Yes (observed by you)

R for Yes (reported by another observer)

N for No (definitely cannot perform the particular item)

Q for Questionable/Unsure (cannot judge accurately)

U for Unable to judge (no opportunity to observe, judge or obtain report)

Where the age line does not pass through an item which is scored, record your judgement just to the left of the shaded section.

DELAYS ON INDIVIDUAL ITEMS

Any item which is scored as "No" and which is completely to the left of the age line, is considered as a delay. This means that the child's development on this item is delayed in relation to that of 90% of most children. Delayed items should be emphasized by coloring in the right end of the bar.

INTERPRETATION OF RESULTS

Overall results on the Developmental Record for Infants and Young Children are interpreted as Satisfactory, Questionable, Developmental Delay and No Result based on the number of individual item delays. An item delay is defined above. When all items have been completed count the sections (areas of development) which have two or more "delays" or which have one delay and no "Yes" items intersected by the age line. Judgement can then be made as follows:

Developmental Delay: (DD)	Two or more sections which have two or more item delays. or One sector with two or more delays and one or more section with one delay and no "Yes" items intersected by the age line.
Questionable (Q)	One section with two or more Delays or One or more sectors with one Delay and no "Yes" items intersected by the age line.
No Result: (N.R.)	When U (unable to judge) and Q (Questionable/Unsure) judgements are frequent enough to cause similar patterns for Developmental Delay or Uncertain if the U and Q items were scored as No.
Satisfactory (s)	Any situation not listed under Developmental Delay. Questionable or No Result.

ITEM DESCRIPTIONS

(See following pages)

LANGUAGE

1. Laughs, chuckles.

   Produces some pleasure sound either spontaneously or as reaction to adult's actions, speaking, playing etc.

2. Makes distinct, separate sounds.

   With voice e.g. "muh", "da" or any distinct separate voice sound, even though it might not sound like a word you know.

3. Two syllable babbling.

   Puts two separate sounds together, could be repetition, e.g. "ga-ga".

4. Imitates coughs, sounds etc.

   Will copy and repeat some sounds that you make or that he has heard e.g. a cough, grunting, clicking tongue etc.

5. Makes several sounds in one breath.

   Sounds run together, need not be distinct or make sense.

6. Plays at making sound when alone.

   Could be voice sounds or noises with objects e.g. banging a toy.

7. Some words besides "Mama" and "Dada".

   Score yes even if not complete or exact words. Meaning may be clear to you only. Words do not have to be understandable by all but must mean same thing whenever they are used.

8. In play copies outdoor sounds.

   Could be indoors sounds as well e.g.'s animals, car, egg beater, t.v. character, electric shaver.

9. Fetch familiar object if asked.

   Will get something for you if you ask.

10. Responds, reacts to simple phrases.

    "All-gone", "going to bed", "no" (see also #9).

11. Demands by pointing and vocalizing.

    To show he wants something, points or makes some gesture and makes some sound or a word.

12. Vocalizes, points to show adults.

    To show objects etc. to others. Makes some sound and some pointing or indication.

13. Two word phrases, 2 concepts.

Uses two or more words together in meaningful phrases. Must be two separate "ideas" e.g. "shut door", "daddy gone", "want milk". Phrases like "Bye bye", "all gone" do not pass.

14. Uses 3 word sentences.

e.g. "put baby sock", "daddy gone work". Not necessary to be like adult sentences.

15. Names familiar objects.

Spontaneous or if you ask him, words to be reasonably recognizable by somebody not familiar with child's speech. e.g. animals, pets, T.V. characters, toys, "household" objects.

16. Joins in nursery rhymes, songs.

Doesn't have to know whole verse; knows some parts and joins in with these.

17. Converses in sentences.

Needs to be conversation in which the child uses sentences at least twice to respond to what has been said to him.

18. Tries to tell about what he is doing.

Tells spontaneously or in response to question e.g. in drawing, play etc. while it is going on.

19. Uses plurals of nouns, pronouns.

e.g. "they", "we", "us", "dogs", "trees", "children" etc. Score yes even though may not always be "correct" e.g. "mouses".

20. Speech easily understood by strangers.

You may need to ask about this from a person who does not know the child very well.

21. Uses "and" to join phrases etc. into continuous speech.

Not just using "and" to string single words together.

22. Sings, says nursery rhymes, songs, T.V. ads.

At least a 2 to 3 line sequence or a full sentence.

23. Tells well known story.

Tells all the important parts of the story from memory without the use of appropriate picture sequence.

24. Gives reasonable explanations to elaborate experiences.

If you ask is able to tell you more about an event, something that has happened recently. Can elaborate to help someone else understand what he has said.

25. Describes, not just names, what is happening in drawsings.

Action described may be fairly straightforward.

26. Tells jokes, riddles.

Even if riddle or joke is nonsensical or not funny score yes if intention is reasonably clear.

COGNITIVE-ADAPTIVE

27. Watches face (100% by 3 months).

When a face comes close will regard it intently.

28. Turns head to voice. (100% by 3 months).

Child turns to sound of his name if it is spoken (may need repetition) by somebody he does not see.

29. Holds, looks at, shakes rattle.

Needs to look at and shake, not just hold the rattle.

30. Bangs object when playing.

Deliberately makes a noise e.g. bangs hand or toy on table or floor.

31. Recognizes familiar people.

Smiles, reaches for.

32. Hits together objects held in hand.

With intent, makes noise.

33. Drops objects as game, to watch fall.

Drops objects when seated in highchair, or in crib etc. so that somebody will pick it up. Shows signs of playfulness, pleasure etc.

34. Looks for objects if seen dropped or hidden.

Searches in or looks at correct place. Must have seen or been playing with object and have seen it being hidden, or watched it being dropped.

35. Looks for object, not in correct place.

Must have been playing with object, dropped it. Starts looking but not in right place.

36. Holds out and releases objects to others.

Will usually give up, release an object to you when you ask.

37. Searches for toy even if not seen hidden.

During a game or similar activity will start to look for an object which he has lost or which has been hidden by somebody else even though has not seen the object hidden.

38. Points to if asked.

If asked "where is ---" or "point to ---" some object or particular person, will point to this person or object. Could also include going to.

39. Remembers where some objects belong.

Knows where some things belong when asked or when putting things away.

40. Identifies familiar things from T.V.

Not on T.V. at the time but later e.g. pictures of characters, toys, games, etc.

41. Knows names of playmates.

Is not necessary for him to be able to say names, as long as he knows them e.g. if he indicates correctly when you ask.

42. Uses objects in pretending play.

Uses objects e.g. blocks of wood, jars, bits and pieces even other toys etc. when playing to pretend that these are something else.

43. Asks questions.

Is curious about the world around him, asks some questions.

44. Makes dolls do things/act out in play.

Makes doll, teddy bear etc. do things : eat, sleep, drink, play games; "tells off" or scolds, talks to it.

45. Imitates action at a later date.

Sometimes will imitate or copy something he has seen or done previously e.g. some game, a real life incident, an incident in a story etc.

46. Names, talks about what he has drawn.

Must be talking about his drawing, not simply naming contents.

47. Recalls events from recent past.

Tells you about things that happened earlier in the day or even a few days previously (either without prompting or if you ask).

48. Asks names of things.

Asks "what's that?" or uses similar questions.

49. Draws pictures with more than one object.

Not just a single object or figure, other details must be included.

50. Understands concept of three, can select three objects.

Show me three blocks, three cookies etc. (not just counting by rote).

51. Draws human figure, at least six parts.

Note; 2 eyes - 1 part, 2 legs = 1 part, etc.

52. Pictures recognizable as houses, people etc.

Even though picture, drawing may be very simple, as long as it is recognizable.

53. Understands concept of five, selects five objects.

See #50.

54. Names, recognizes five colors.

May have to help by saying "Show me the - one".

55. Drawing of head includes five parts.

Eyes, nose, mouth, ears, hair, eyebrows, teeth.

FINE MOTOR

56. Turns head to watch movement (100% by 3 months).

    Especially following or tracking the moving object e.g. person, toy, mobile if this movement not too rapid.

57. Turns head to (light) sound (100% by 3 months).

    Concentrate on sound, (ignore light) which may need to be repeated, fairly close.

58. Grasps feet.

59. Transfers object hand to hand.

    Can pass an object from one hand to another, intentionally not just by chance.

60. Holds object each hand same time.

    Can hold two objects, one in each hand, at same time.

61. Pokes finger into holes, at objects.

    Only small holes, cracks etc. and/or poking at objects.

62. Helps hold bottle, cup when drinking.

    Takes a reasonably firm grasp, may even hold bottle himself.

63. Holds out toys but does not release.

    Holds out toy etc. as though to give to another, but does not release.

64. Pincer grasp evident.

    Using thumb and forefinger can pick up small objects e.g. corn, crumb, raisin.

65. Removes, replaces lids.

    When playing with jars, bottles, boxes etc. can take off and replace lid though not necessarily perfectly (especially screw tops).

66. Builds two block tower.

    Can place one block on top of another and top block will stay when takes hand away.

67. Builds three block tower.

    As for #66 with four blocks.

68. Builds four block tower.

    As for #66 with four blocks.

69. Unwraps small objects.

e.g. toffee, candy, lolly from paper.

70. Builds six block tower.

As for #66 with six blocks.

71. Pours water from jug without spilling.

Some spilling allowed; must be a reasonably sized jug, not a small toy.

72. Builds seven or eight block tower.

As for #66 with 7 or 8 blocks.

73. Assembles simple puzzles, toys.

e.g. simple jigsaws, form boards, puzzle boards or assembling simple construction toy or kit etc.

74. Holds pencil/crayon in hand not fist.

May be a variety of "grips". Score yes except for fist grip.

75. Builds nine-ten block tower.

As for #66 with 9 or 10 blocks.

76. Buttons shirt, blouse, coat correctly.

Needs to get button in correct buttonhole on most occasions.

77. Prints first name (only 50% achieve this by 60 months).

Must be the child's own production, not simply copying but need not be perfect.

PERSONAL SOCIAL

78. Laughs at games.

Smiles and laughs when you play game with him e.g. making faces, playing "boo".

79. Smiles at people. (100% by 3 months).

80. Crying stopped by voice/picked up. (100% by 3 months).

Crying quietened by being picked up and/or by soothing voice sounds.

81. Feeds self rusk/biscuit.

Likely to be messy.

82. Distinguishes strangers; cries, frowns, clings.

Gives some indication that he distinguishes strangers from known people - usually some form of moderate anxiety, negative emotional display or distress. e.g. becomes quiet, withdraws, frowns, clings, whimpers, cries etc.

83. Insists on, tries doing things for self.

Insists on attempting to do things for self - need not be successfuly (usually with feeding self).

84. Tries to help with dressing.

Helps by holding out arms, legs at appropriate times.

85. Stops activity when name called.

Not simply turning to sound of voice, but actually stops activity (may only stop briefly).

86. Demonstrates affection.

Usually to parent but may also be to other adults. By hugging, kissing, putting head forward to kiss.

87. Reveals sense of ownership, defends possessions.

Recognizes "own" possessions, will defend these if similar age child tries to take them. These possessions may even be only temporary as in nursery or playroom.

88. Indicates "No" by some gesture.

Shows that he doesn't want to do something e.g. by shaking head, withdrawing some other gesture. (May also say "no" but this not necessary).

89. Defends self when taken advantage of.

e.g. if pushed over or hit, (see also #87).

90. Can take off shoes and socks.

May often do this without undoing laces etc.

91. Tries to join in play of others but does not actually play with them.

Child may not make a truly social contact but will play alongside others (parallel play).

92. Sometimes joins in what others are doing.

Particularly in unstructured play e.g. dressing up, sandpit play, etc. Could be joining in with one other, or a group. Note emphasis on "Sometimes".

93. Gives directions to other children.

Can tell other children what to do when playing or in games is able to give instructions, directions.

94. Usually plays with other children, some little squabbles.

If there are only occasional squabbles or if there are none scores as Yes. If constantly squabbling, domineering or disruptive score No.

95. Recognizes others as boys/girls accurately.

May need to be asked, prompted.

96. Gives full name; first and last accurately.

Names should be clearly recognizable.

97. Dresses and undresses without help.

May not do everything perfectly but usually completes most of the task.

98. Gets ready for bed without help.

As for #97

GROSS MOTOR

99. Rolls over back - stomach.

100. Rolls over stomach - back.

101. Pulls to sit if hands held.

If you hold his hands when he is lying on back in front of you he can (but not always) pull self to sitting position.

102. Sitting turns to get object.

Can "swivel" around in a seated position to retrieve an object.

103. On tummy lifts chest, holds well.

When lying on stomach can lift head and chest and with arms in front can hold self up for some little time (not just momentarily).

104. Pulls to stand using furniture.

Can pull self up into standing position using furniture, other objects etc.

105. Sits, back and head unsupported.

Needs to be placed in sitting position first.

106. Walks with hand held.

Can walk but needs one hand held to steady him.

107. If held under arms makes stepping movements.

Feet need to touch some surface.

108. Scoots around on wheeled toy.

Sits in or on toy and pushes with feet - some children may only go backwards.

109. Walks well.

Is past the early staggering stage; may have the occasional fall, usually because he trips over toys etc.

110. Climbs on playground and other equipment.

May not be very high but some climbing involved.

111. Jumps on spot with both feet.

Both feet lift off ground together.

112. Kicks large ball.

Brings leg back to kick, doesn't need to hold on to anything for support.

113. Runs smoothly, turns, stops quickly with ease.

Runs well, turns sharp corners easily, keeps good balance, can stop suddenly without difficulty.

114. Rides tricycle using pedals.

115. Hops on one foot : on spot or travels.

For some distance or for some time, about ten hops.

116. Makes out of door constructions with large materials, boxes etc.

Also forts, cubby houses etc. with chairs, blankets, boxes etc.

APPENDIX 6.

SUPPLEMENTARY ITEMS LIST.

Language

50*	3 - 7mo.	Turns at mention of own name.
146*	16½ - 30mo.	Names familiar objects.
206*	26 - 35mo.	Uses "same" and "different" correctly.

Cognitive-Adaptive

209*	32 - 40mo.	Sometimes plays with small representational toys (in make believe games).
225*	31 - 40mo.	Sometimes tries to count objects when playing.
248*	38 - 50mo.	Makes things (constructs) out of odds and ends.
254*	42 - 56mo.	Draws or copies a square.

Fine Motor

119*	13 - 20mo.	Spontaneous scribbling with pencil.
120*	18 - 25mo.	Able to draw vertical line.

Personal Social

82*	6 - 12mo.	Responds at least momentarily to inhibitory "No".
160*	19 - 27mo.	Asks for help. Will say "I can't do it."
199*	24 - 30mo.	Can wash and dry face and hands.
241*	33 - 40mo.	Amuses self for up to 1 hour.
250*	37 - 46mo.	Can comb and brush hair.
273*	43 - 60mo.	Engages in cooperative play.

Gross Motor

65*	10 - 16mo.	Stands up (from sitting etc.) without help.
125*	11 - 15½mo.	Pushes and pulls large objects around floor.
202*	22 - 30mo.	Can manoeuvre large toys around corners/ obstacles.
207*	28 - 38mo.	Can balance on 1 leg.
222*	32 - 40mo.	Can sit on floor cross legged.

APPENDIX 7.

DEVELOPMENTAL SCREENING IN MASSACHUSETTS;

SOME IMPRESSIONS, SOME IMPLICATIONS.

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In the past few years increasing attention has been paid to the possible early detection and treatment of developmental delay (Burdon, 1976). In the United States of America this concern has found expression in national legislation to provide adequate early screening, diagnosis and treatment services for young children. This paper reports on the operation of the Federally sponsored program as it relates to young children and as well a similar state supported screening program within the Commonwealth of Massachusetts. Information was gathered during discussions with a number of Government Department officers (Federal and local) in Massachusetts and during visits to a number of school facilities, assessment centres, research and consultant organizations and other programs and individuals concerned with a range of early childhood services.

In 1967 the Medicaid law (Title XIX) was amended to include a program of preventive health services to be made available to children under 21 years of age who are eligible for Medicaid benefits. Medicaid is the name used to describe the medical assistance program of Title XIX of the Social Security Act. This program, passed by Congress in 1965, is a federal-state partnership. That is, both the participating state and the federal Department of Health, Education and Welfare share the costs of providing medical services to certain categories of low-income and/or disabled persons. This program of preventive health services is called the Early and Periodic, Screening, Diagnosis and Treatment program or EPSDT.

EPSDT is not a uniform, nation wide program. Because it is part of Medicaid the designed for Medicaid eligible children and young people up to age 21 years, the delivery of EPSDT services varies from state to state according to each state's health and welfare service. The Federal government has charged each state with working toward the development of screening and diagnostic services so that those eligible will have access to a co-ordinated, integrated evaluation process and health care system. Under Medicaid the Federal Government establishes broad policy guidelines concerning who is eligible for the program, what services they must be provided, and basic administrative practices. Such guidelines include Medicaid, EPSDT Guidelines (1972), and A Guide to Screening. EPSDT Medicaid (1974). There is then no uniform screening or diagnostic program across the nation. Reference to developmental screening (as distinct from screening for various health, disease, and physical and sensory problems) was very cursory in the 1972 Guidelines and did not mention intellectual development at all, however this deficiency was corrected in the 1974 Guide to Screening. This 1974 publication is a very comprehensive guide and a useful model for any national program. The success of EPSDT as a national policy must rest on the extent to which each state designs and implements its own Medicaid program and the extent of its welfare policies because eligibility for Medicaid is closely tied to eligibility for public assistance. In states where welfare and public assistance policies are not well developed or do not reach many needy families then EPSDT cannot provide the preventive services for which it was designed.

One very worthwhile feature of EPSDT is its outreach function. Whereas many health care and parent-child programs provide services only when requested by recipients, EPSDT requires the states to actively seek out all those eligible for the program and offer them services. In this way EPSDT has the potential to reach all needy children and provide preventive care for a range of health and developmental needs. The realization of this potential is a matter of state policy and action.

Within Massachusetts, EPSDT is known as Project Good Health (PGH) and is administered by the Medical Services Section of the Department of Public Welfare. Funding for PGH is on a 50-50 Federal-State basis through Title XIX monies.

There are approximately 110 local Public Welfare Department offices within Massachusetts, and through these offices Public Welfare personnel are required to explain PGH to all Medicaid recipients. If the person wishes to have his/her child(ren) screened then the office arranges the appointment and offers free transport. The office must follow up to ensure that the appointment has been kept and that any ensuing diagnosis or treatment is carried out. There are 39 departmental officers whose specific task is to conduct outreach work for PGH by personal contact, follow up, discussion and explanation.

The screening is carried out by private physicians who are paid $300 for each service. The screening, diagnosis and assessment are all done in one visit. Some states conduct the screening first then follow up later but this has apparently created later difficulties in reaching individuals again, of convincing them of the necessity of having an accurate diagnosis or that the screening has shown up something that requires diagnosis and possible treatment. For this reason Massachusetts has adopted the policy of conducting as much of the assessment as possible at one visit.

At present in Massachusetts nearly 60% of children screened under PGH have some problem but this figure is inflated fairly substantially by the dental component of the screening process. The cost of screening for a child from birth to age 16 years is calculated at about $8000 which would total no more than the cost of two weeks of hospital confinement during that 16 year period. Massachusetts is presently attempting to get the cost of follow up specialist treatment reimbursed by the Federal government on a 75%-25%, Federal-State basis.

An examination of the suggested protocol for the periodic health assessment for Massachusetts (P.A. Policy Manual, Chapter VII, Section V, Part 1, pp.1-7, 1976) reveals some obvious inadequacies in the areas of intellectual development assessment; in fact intellectual development is not even considered. This probably reflects the strong medical influence and the fact that the protocol adopted for assessment are those proposed by the Massachusetts Chapter of the American Academy of Pediatrics.

Discussion of EPSDT requirements and screening protocol for young children and the apparent weaknesses in these protocol in their educational and psychological screening led to investigation of screening under the Massachusetts Chapter 766 Comprehensive Special Education law. This law makes it compulsory for each School Board in Massachusetts to find and evaluate all children in its district with special learning needs and problems, to develop individual programs for these children and to provide that program within the mainstream of the local school system where possible. Chapter 766 regulations devote a great deal of attention to early childhood screening even though the concerned age range of Chapter 766 is 3 through 21 years. The regulations for Chapter 766 draw a distinction between children who are 3 and 4 years old and children of kindergarten age. According to the regulations, all kindergarten-aged (i.e. 5 year old) children are to be screened, but only those 3 and 4 year olds "with a reasonable likelihood of having substantial disabilities" must be accommodated by a screening program. Thus the law makes a distinction according to age and presumed disability.

Another distinction found in the law is between physical status assessment and general developmental or psychological assessment. This is a distinction based on comprehensiveness or intensity; while the physical status assessment is to be an intensive examination, the developmental screening is to be non-intensive in nature.

Chapter 766 specifically requires that the following protocol be followed with all kindergarten aged children and with those 3 and 4 year olds with reasonable likelihood of having substantial disabilities.

1. Complete physical status assessment including testing of hearing and vision.
2. An assessment in practical tasks and activities of visual, auditory and motor functioning, separately and in integration.
3. An assessment of language functioning, including comprehension, expressive abilities, maturity or articulation and grammatical and conceptual development in English and the child's primary language if not English.
4. Assessment of social-emotional behavioral functioning including patterns of interaction with adults and with peers, and degree of confidence, persistence, attentional features and impulse control.
5. Solicitation of information from parents about the child regarding possible special needs, previous screening, evaluation, previous placement in a special education or treatment program.
6. Provision of an in-service training for all teachers of kindergarten age children.

Because of the requirement that local school systems administer Chapter 766 and with over 450 quite separate school districts in Massachusetts some degree of diversity in screening procedure is to be expected. Examination of an extensive but informal collection of early screening protocol proposed by local school districts in Massachusetts revealed that the diversity is extreme rather than moderate as had at first been anticipated. This informal collection is held by the Early Childhood Project of the Massachusetts State Department of Education's Division of Special Education.

It was decided to investigate one school district's program in depth to gain some understanding of how a screening procedure operates in practice.

In the City of Somerville the cohort of kindergarten grade entrants (about 800 children) are screened in the spring (April-May) when mothers bring their children to enrol at school for a September start. The health screening is carried out in September and October once the new school year has commenced. Of the 800 cohort about 3% are "delayed", this is the "refer" group which require detailed diagnosis and special follow-up. Another 6% fall in the "repeat/rescreen" group. These children are re-screened immediately. In most cases no developmental delay is found and for the other few any identified delay is usually only slight. For those with slight delay it is usually suggested that the kindergarten teacher modifies her program to suit the individuals concerned. It should be noted that the severely retarded and delayed are not usually included in this screening because they would not be presenting for formal kindergarten entry. This process in Somerville applies only to those entering the public school system, procedures to screen non school-entry kindergarten aged children although these are only few in number, have yet to be developed.

The Early Screening Program in Somerville comprises a comprehensive parent questionnaire, an intensive medical evaluation, hearing and vision testing and the Eliot-Pearson Screening Inventory (EPSI) an individually administered developmental screening instrument which surveys perceptual, cognitive, language and motor development. The EPSI was developed by Dr. Samuel J. Meisels and Ms. Stone Wiske of the Eliot-Pearson Department of Child Study at Tufts University. For younger children (3-4 year olds) developmental screening is conducted by using the Denver Developmental Screening Test.

For children already in the school system an evaluation (CORE Evaluation) can be requested by parent or guardian, school personnel, court officer or family physician. If it is decided that a child does seem to need special help a meeting will be held by the Core Evaluation Team to discuss how to meet these needs.

The initial CORE team consists of the school principal (or his designee), the parent, the teacher and the child. The team may at some point ask for assistance and input from a "specialist" in physical, psychological or medical development. These specialists may or may not become involved in the ongoing CORE process depending on the needs and progress of the child and the decision of the initial CORE team. Somerville is currently reorganizing to move completely toward the direct-service, diagnostic-prescriptive CORE team of the principal-parent-teacher and child.

Parents are seen as key people in this effort to assist special needs children. Under Chapter 766 parents have the following rights

1. to request an evaluation of their child, if this seems necessary.
2. to share in the evaluation process.
3. to ask for further evaluation including an outside opinion.
4. to be told the results of the evaluation and what the proposed education plan is.
5. if there is disagreement with the proposed program parents may follow an appeals procedure to change or modify the plan.

Chapter 766 appears to present a good deal of promise in locating and diagnosing children with special needs. It is to be hoped that all school districts will carry out the screening conscientiously, will develop adequate educational programs for special needs children and further, that these efforts and energies will not be frustrated by economic restrictions and political interference. One aspect of 766 which does cause concern is the extreme variety of developmental screening instruments and batteries many of which appear to be extremely "home grown". It may be in the best interests of the children (and their parents) concerned that screening instruments are submitted to a central body (e.g. State Education Department) for approval before they are used by small local school systems which may lack the expertise to devise valid and reliable screening programs.

There has been concern within Massachusetts that the advent of Chapter 766 has left a gap in the educational provision for children from birth to age 3 years. The Department of Mental Health, Division of Mental Retardation had previously provided preschool nursery programs for retarded children in the age range 3 to 7 years in Community Clinical Nursery Schools. With Chapter 766, children previously served in these Community Clinical Nursery Schools have become the responsibility of local school systems so the Department of Mental Health is transferring its involvement to "special needs" children in the 0-3 age range. The Department's plan is to identify special needs children, to provide counselling for parents to help them make decisions about what to do about the situation and to provide intervention programs to help these parents care for and deal with their "special needs" children.

The major problem is to actually identify these very young "special needs" children and although no formal developmental screening program has been developed yet the Department is working towards some standardized screening/testing procedure. The problem is heightened by the need to identify those with "non-visible" problems and the whole range included in the brief of "developmentally delayed, mentally handicapped and at risk" children. The Department is anxious to develop an involvement in "at-risk" neighbourhoods, those where there is greater likelihood of child abuse, where there are more very young parents, mentally retarded parents, handicapped children and where there is less likelihood of support services being available.

There is a "new" population of mothers in Massachusetts for last year

25% of all live births were to mothers aged 15 years or younger and 50% of all live births were to mothers aged 18 years or younger. The Department of Mental Health is concerned about these mothers who will need special support, help and counselling and also about the need to identify as early as possible the likely increased percentage of infants suffering some form of trauma or retardation who are born to these young mothers. This would appear to be the most needed area for development of parent support and parent education programs in the future.

The impression gained from these visits and discussions is that there is a good deal of potential to identify the majority of young children with special needs or who live in "at-risk" situations. There is a confusing variety of screening programs in operation within the state, it may be best to reduce this complexity and maintain some reasonably uniform standard of screening among the 465 school boards in Massachusetts. There is less confidence that the ability to deal with special needs is as highly developed as the potential to identify the needs. Attempts are being made to develop inservice programmes for teachers at all levels through school systems but the effort appears to be sporadic and to need a good deal more attention.

Implications for Australia

Within recent years in Australia a number of reports have recommended the establishment of comprehensive community health services (National Hospitals and Health Services, Interim Committee, 1973) especially as they bear on the provision of health services for low income earners (Martin, 1976) and young children (Maddocks, 1976). Although the latter report makes some recommendations about health and developmental assessment it does not appear that a great deal of attention has yet been given in Australia to co-ordinated approaches to the early detection and treatment of disease, handicap and developmental delay. There are fairly significant groups in the population whose children are "at risk" in relation to health and psychological development (Krupinski and Soller 1971, Winefield and Moss 1975, Murrell and Moss 1976) who could well benefit from a co-ordinated program of periodic screening and assessment and follow up intervention or remedial measures.

The potential exists already in Australia to establish a network of early and periodic screening, diagnosis and treatment through pediatric hospitals, infant welfare organizations, children's hospitals, School and Mental Health departments, early childhood education services, community welfare departments, community health services and other relevant organizations. These services would need to be co-ordinated at a regional level as in New South Wales or perhaps even through a single comprehensive community child health care service as suggested for South Australia (Maddocks, 1976).

Whatever organization framework is used the essential requirement in establishing any program is that it is made to work effectively; it must do the job for which it was established. A perennial problem faced by many support service facilities is that of the "non-user" (Murrell and Moss, 1976). It is often found that those whose need is greatest make least use of services while those whose need is least make best and more frequent use of them. To this extent a number of the working features of EPSDT have direct relevance for Australia. These include the free provision of screening and preventive health services for the families of low-income earners and the unemployed, the compulsory requirement that medical and welfare personnel inform those who are eligible about the availability of these services, the outreach function by which agencies are required to actively seek out those who are eligible and explain the services available, and the requirement that the agencies actually arrange the consultation, offer transport and ensure effective follow up. It is also suggested that a reasonably uniform set of screening and assessment procedures be used and so avoid the confusion of over diversity and the lowered efficiency of inadequate procedures which was evident in the screening batteries used in just a few of the school districts in Massachusetts.

Staff training, both pre-service and in-service will also require attention to alert and train the range of professionals and paraprofessionals involved or associated with screening diagnosis or intervention. Support must also be available, and especially for parents and families. This support might be medical, it might be financial, perhaps educational, perhaps psychological, perhaps for the child, perhaps for parents and probably a combination of all. Some professional attitudes will need to change and some priorities be reassessed but training will be essential to ensure that screening and diagnosis are conducted accurately and that appropriate and effective intervention is advised and is available.

The cost of implementing such a scheme might appear at first to be high and would depend to some extent on whether a new administrative organization is created or whether existing structures are used. At an operational level however considerable financial savings can be expected. The early identification and treatment of health or developmental delays will mean that fewer children will require long term hospitalization or institutionalization and these savings will more than cover the costs of the screening and treatment programs. In some cases however, delays will not respond to specific treatment or intervention. In these situations the chief objective will be to provide guidance for the family, to help them manage the situation and to prevent the development of secondary problems. It is felt that a better parental understanding of a child's developmental strengths and weaknesses can do much to avoid these secondary emotional problems and that an understanding of a child's disability and its later consequences in terms of special education needs may do much to help the family make realistic plans for the future. Whether the benefit is measured in human or in dollar terms the establishment of such a scheme can be only for the best. This will require reallocation of resources from curative to preventive care and some rethinking of professional training procedures and priorities. It can be done and is being achieved elsewhere; here are no good reasons why similar advantages cannot be achieved for children in Australia.

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